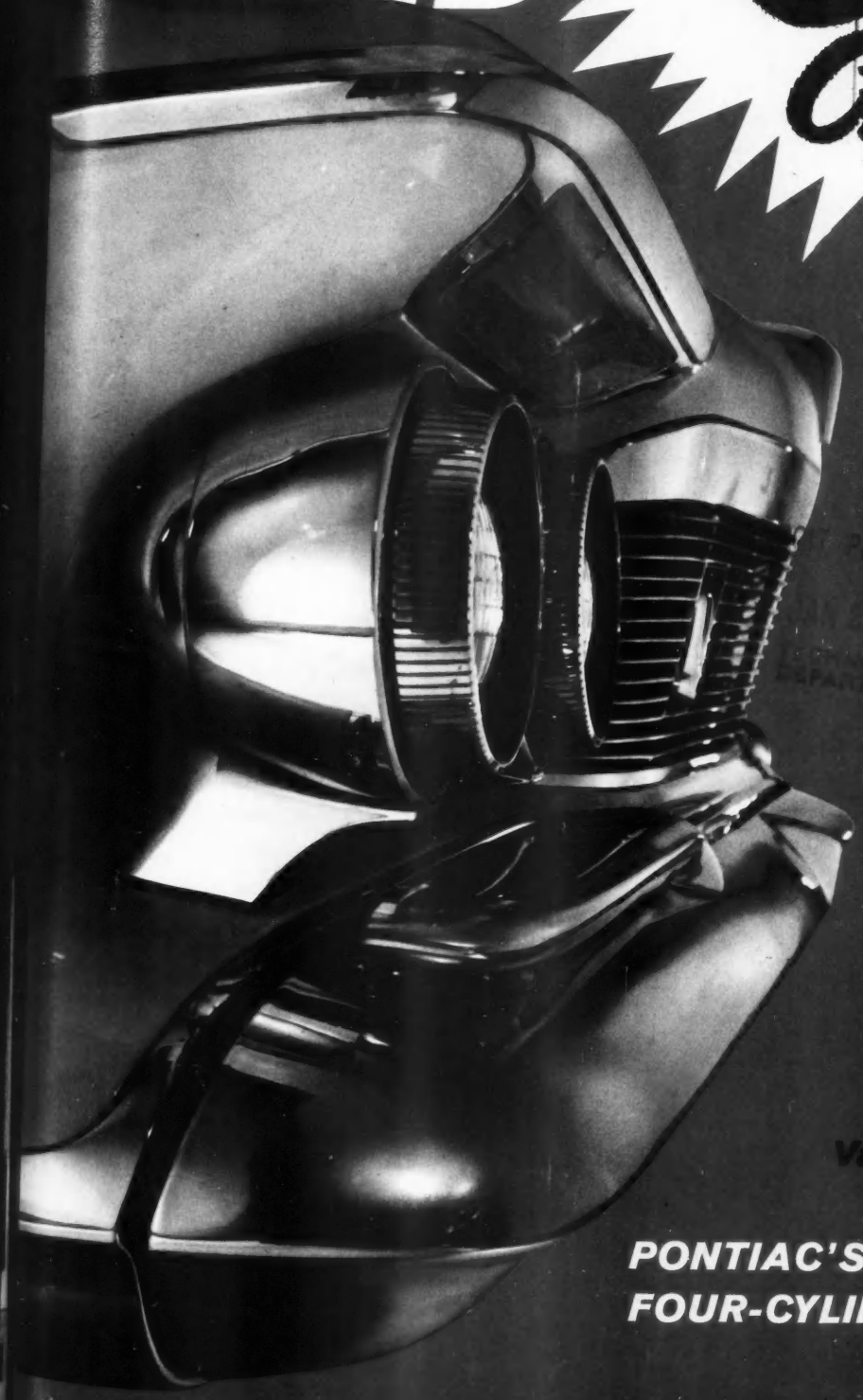
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MOTOR TREND

'61 CARS!

SEPTEMBER 1960 35¢



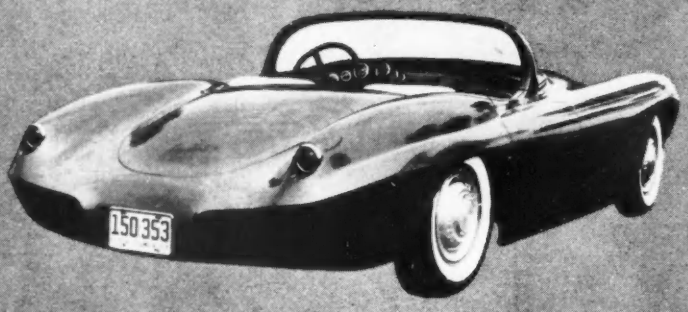
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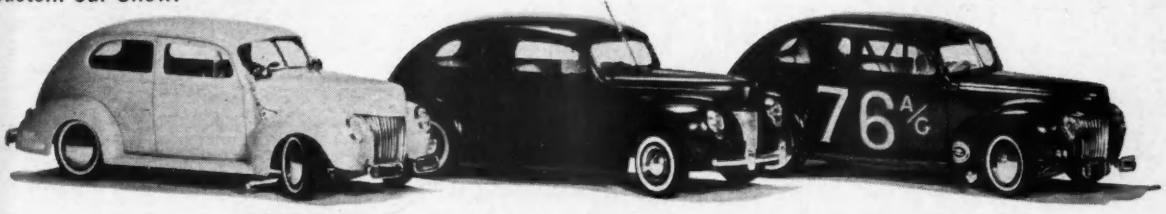
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This month's cover features a preview look at the radically re-styled front area of the 1961 Imperial. A full story on the development and goals of this new look from Chrysler will be found on page 30 of this issue.

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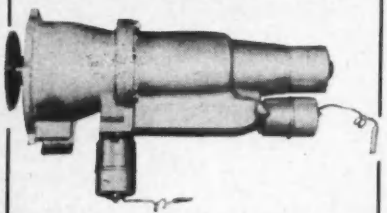


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(Also see pages 79-81 in July '60 HOT ROD MAGAZINE)



MEMO FROM THE EDITOR

DON WERNER

THE FIRST 1961 CAR is to be announced on September 18th. Then, in the 25 days that follow, 26 more makes or special types (such as the compact offspring of bigger cars, the Thunderbird, the Corvette, etc.) will be publicly unveiled.

The reason for this concentrated confusion of introductions is, of course, the Detroit auto show, which opens on October 14th. Every car maker feels compelled to have his full line out by show time, and yet is unable or reluctant, or very likely both, to display 1961 models earlier than mid-September.

The custom in preceding years was to stretch introductions from September into December. This span allowed enough time so we saw, on an average, only one or two new cars per week. The 1961's, under the new schedule, will "come out" at an average rate of better than one per day.

The idea of holding a national show in Detroit is logical and probably good. But October 14th is undoubtedly too early. Anyone who is interested in seeing the new cars as they appear this year faces a rigorous schedule, chasing from dealership to dealership. Before the end of September comes, all but the most dedicated are apt to be exhausted and give up.

What's inevitable is that none of the new cars will get the attention they deserve. And this, I think, is the most regrettable consequence. As you can see in our 1961 preview in this issue, the new cars for 1961 are uncommonly unique. Detroit is trying hard and the results are showing.

Further, the battle for attention between cars is certain to lose much of its thunder alongside the Democratic-Republican political barrages. There simply won't be enough trumpets and spotlights to go around.

For those who like a program to follow, this is the order (subject to last-minute revisions) in which the new cars will appear: first to come will be Ford and Falcon and Dodge and Dart, with a nearly unrecognizable Plymouth close on their heels. Next will be DeSoto, Valiant, Lancer and Imperial.

Then the Olds F-85, the Buick Special, the standard Buick, Pontiac and Pontiac Tempest, Mercury, Comet, Cadillac and the standard Oldsmobile. Down the stretch will be Chrysler, Lincoln, Rambler and the American, Studebaker with its Lark, Chevrolet, the Corvair and the Corvette. Just under the wire will be the Thunderbird.

* * * * * *

If you have not been reading MT as regularly as you should, there are some new and unfamiliar names in the foregoing list. The Olds F-85, the Buick Special, the Pontiac Tempest and the Lancer are, respectively, the new compacts from Olds, Buick, Pontiac and Dodge.

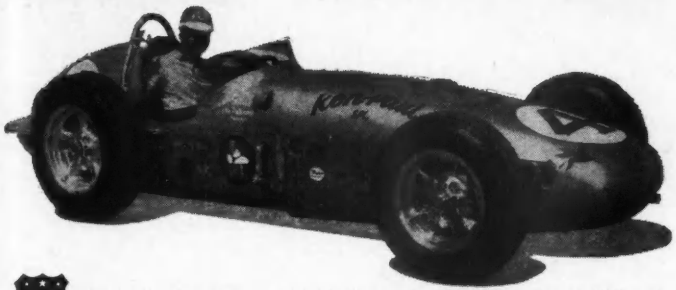
Now the line between what is and what is not a compact is getting harder and harder to draw. But without stopping here to debate the issue, the four new compacts added to the existing Corvair, Falcon, Comet, Valiant, American and Lark give us, for 1961, a total of 10 compact cars.

Ten compacts! At this time a year ago there were only two. In 1961 there will be only 15 sedans of standard size made in Detroit, which will bring the ratio between big and compact down to three-to-two. Another year and the balance may be completely the other way.

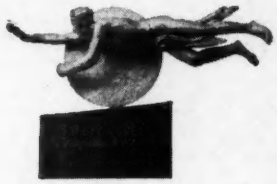
With Detroit so compact-car minded, perhaps it was to be expected that we'd get a compact introduction season. Detroit does things that way. But it can go too far. We like the excitement of new cars—but there should be enough time to enjoy it.

Year after year...including 1960...

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USAC **Jim Rathmann, winner, 1960 Indianapolis "500." Speed, 138.767 mph—new track record**



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Again in 1960 Raybestos Brake Lining made the Indianapolis Speedway a safeway for the first three finishers—Jim Rathmann, Rodger Ward and Paul Goldsmith. These three know that not all brake lining is as safe as Raybestos . . . and that when they're slamming into those cruel turns at 140 mph they just can't afford to take chances on brake failure.

The 500 hard miles of the Indianapolis classic form the most grueling brake proving ground in the country . . . the supreme test of brake endurance. That's why we use this race to develop the lining you need to drive confidently on today's high-speed turnpikes. So look for this Raybestos sign . . . the mark of a dealer who can assure you safe stops every time.



For a set of three 8 x 10 photos of Jim Rathmann, Rodger Ward and Paul Goldsmith, just send $1.00 (to cover handling and postage) with your name and address to Raybestos.

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SEBRING STORY—
SPARK PLUG STYLE

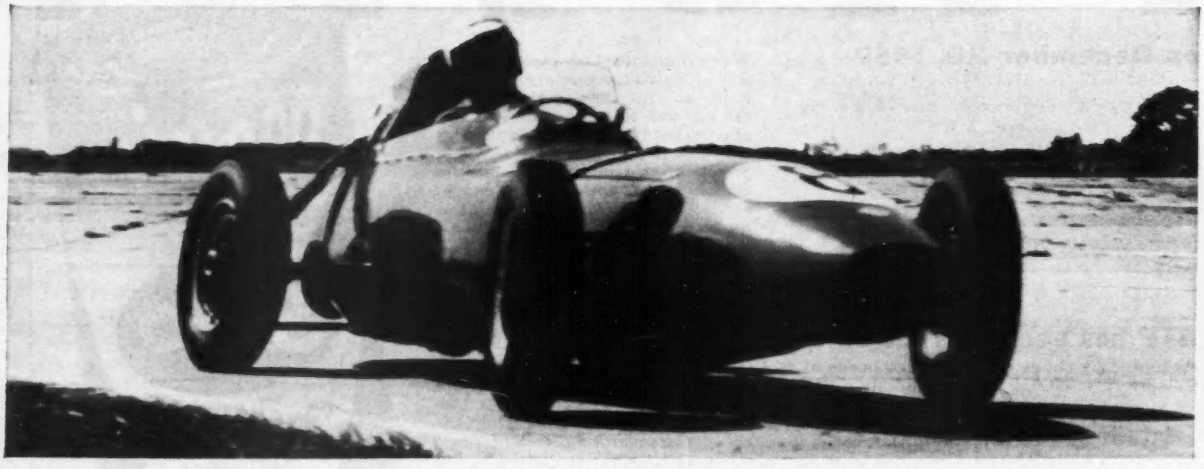


At Sebring, the outstanding spark plug was Champion. In the 3 races, 10 out of the 14 classes were won by Champion-sparked cars. The "birdcage" Maserati that set a new lap record—and the OSCA that won "Index of Performance" in the 12-hour go —were also running Champion spark plugs. Here's the story of Champion at Sebring . . .





SIXTY-FIVE DRIVERS DASH for their cars—and the 12-hour Sebring classic is on! They cover hundreds of miles as they speed through the long, hot Florida day . . . deep into the welcome cool of night. To spark the power for this grueling Grand Prix of Endurance, 41 cars (fourteen different makes) used Champion spark plugs.

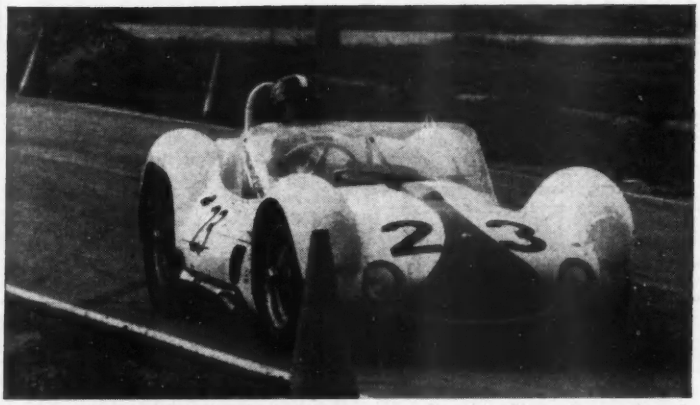


FORMULA JUNIOR WINNER JIM HALL whips his Elva through a turn in a special 66-mile race for Formula Junior cars held the day before the 12-hour contest. (Formula Junior cars bear roughly the same relation to Grand Prix cars that dirt-track "midgets" have to Indianapolis cars.) Powered by a 3-cylinder, 2-stroke DKW engine equipped with Champion J-61R plugs, Hall ran the 30 laps over the specially shortened 2.2-mile at an average of 88 mph. Said Hall, "My Champions didn't misfire once the whole race."

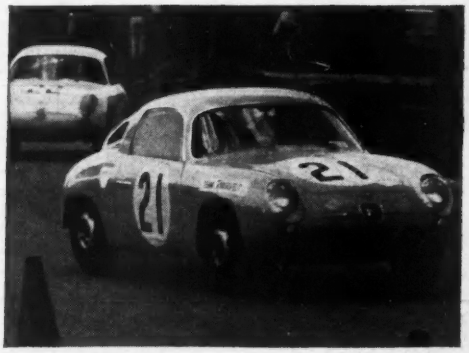
CHAMPION SPARK PLUG COMPANY



THROUGH THE HAZARDOUS HAIRPIN TURN goes John Bentley in the Champion-sparked OSCA that won the coveted "Index of Performance" (awarded to the car that covers the greatest distance in relation to displacement). With the smallest engine (only 746 cc.) of all cars entered in the 12-hour race, the OSCA placed 12th over-all among the 41 finishers—actually beating cars with engines over *six times* its size! Said Bentley, "We wound the engine up rather tight, and the Champions never missed a beat or gave the slightest trouble."



A NEW SEBRING RECORD for fastest lap was set by this Champion-equipped "birdcage" Maserati entered by Camoradi U.S.A. It covered the twisting, turning 5.2-mile course at 94.996 mph, was about 30 miles ahead of the pack when rear end trouble forced it out after more than 8 hours. Here co-driver Dan Gurney takes the Maser through the Webster turns—a 90° right quickly followed by a 90° left.



A HOT CONTEST for lead in the 4-hour race for small Grand Touring cars (under 1000 cc.) took place between these two Champion-equipped Fiat-Abarths entered by Team Roosevelt. At race end, car No. 22, driven by Paul Richards, was over-all winner. The other two class winners, a Sprite and a Fiat, also used Champion spark plugs.



FAST PIT WORK by the Camoradi U.S.A. team pays off for this Champion-sparked Porsche, which won its class in the 12-hour Grand Prix of Endurance. Besides this Porsche, other class winners running Champion spark plugs were a Ferrari, a Corvette, a Sprite, an OSCA, and a Lola. It's further proof that every engine does its best with Champions.



SPARK PLUG CHECKS were much in demand the days before the race. Here Champion's Head Racing Engineer, Don Garner, checks plugs on a car that has just finished a practice run. Spark plug firing ends are good indicators of what is going on inside an engine, play a big part in proper tuning for competition.



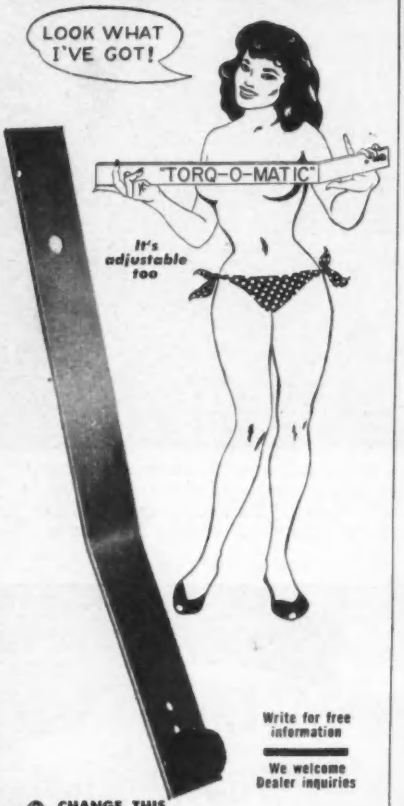
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THE VANISHING MECHANIC

Gentlemen:

"The Vanishing Mechanic" (July MT) was a very interesting article—except that you omitted the *only real reason* why mechanics are vanishing, and *will continue to vanish!*

This reason, systematically subdued, glossed over and sidestepped by virtually every auto magazine, manufacturer and dealer group, is *poor pay.* This is hard to believe in the light of today's high cost of car upkeep, but let's look at the facts.

A good, skilled, experienced, *honest* mechanic cannot make 70 per cent of what a man in another trade can make. I give as examples masons, electricians, carpenters, machinists, painters, glass setters, etc. A national auto dealer group chart shows that the average skilled mechanic *with experience* earns $92 weekly for 47 hours' work—seven hours over the recognized 40-hour work week. This figures out to only $1.95 per hour for 47 hours.

Can you call this a good wage for a skilled technician that took years to get where he is, on a job that requires purchase, upkeep and replacement of $300 to $2000 worth of personal tools, and who must personally guarantee his own work?

The blame for this ridiculous condition rests squarely on the shoulders of the auto dealers and the national auto dealer groups. The manufacturer will not allow itself to be charged a realistic rate by the dealer for warranty repairs. Recently, all the dealers in our small town asked their factories for a small increase in pay for warranty work so that mechanics would work more willingly on warranty problems. These requests were turned down—the dealers have no recourse but to live with the factory's decision.

The American car buyer also shares in the blame. Pushed on by countless ads on "How to buy your new car dirt-cheap," "Get your new car $100 over invoice," etc., he has brought about such undue competition that most dealers have had to keep their employees' wages at the approximate levels of six, eight, or more years ago.

Until John Q. Public realizes that that extra $100 he chiseled out of a dealer only lowered the quality of the man the dealer can afford to have working on his car, until dealers have recourse on warranty rates, until national dealer groups face the problem of wages squarely, John isn't going to get what he wants in the way of service—and good mechanics will be harder and harder to find.

Dean Colley, Chesterson, Ind.
Ex-mechanic

IN DEFENSE OF WOMEN

Dear Sirs:

In reply to the letters in the July MOTOR TREND about this "Date Bait" business, I would like to say a few things on behalf of us girls.

Although I never have gone with a guy "just because" he has a nice-looking car, I know many girls who do. However, I doubt very much whether *any* girl would go for that pimply-faced ugly slob mentioned in one of the letters just because he is in uniform and in a neat car.

This car business reminds me of a mother who admitted outright that her daughter was spoiled—but did she do anything to stop spoiling her? No! If you boys wouldn't break your backs and your wallets catering to us gals—then maybe we wouldn't be so spoiled.

Let's face the facts. When you guys go to buy a car, you buy the one not only pleasing to yourself, but also the one you hope will attract girls. So boys, don't blame your empty wallets entirely on us gals.

Also, you wouldn't cater to the young woman's whims unless you wanted to. So once again, if you are going to put the blame on anybody—put it on yourself.

Sharron Moore Fresno, Calif.

STOPPING DISTANCE

Dear Sir:

One of my students in Driver Education called my attention to your road test of the Buick Invicta in the June MOTOR TREND.

You mention under Stopping Distance, From 60 mph to Standstill—138 feet. According to standard tables, the stopping distance (reaction time distance plus braking distance) is 272 feet.

Will you kindly explain the difference?

Edward Epstein, Jersey City,
Instructor, Driving Education N.J.

The 138-feet figure did not include the driver's reaction time.—Editor.

CORVETTITIS HARD TO CURE

Editor:

The letter in your July issue hoping that the Plymouth XNR would be put into production to cure the Corvettitis epidemic is fine with me, but in my opinion would be a waste of time and money.

Judging by the pictures and information, in the same issue, of the Chevrolet XP-700, it is possible that that could be our coming Corvette. With these terrific advancements, which are sound and not too extreme, the car could be the most popular car ever produced.

More power to Plymouth for making a sportscar, but as far as I'm concerned, the Chevy XP-700 is the greatest Corvette or sportscar that could be produced.

Hobie Johnson Lorain, Ohio

WHAT ABOUT FORD?

Editor:

In the May issue you featured Plymouth's XNR, and in the July issue it was the Corvette XP-700. They were both so ideal I don't know which one is better.

What's Ford's contribution?

Jim Fraley West Liberty, Ohio

THE *REAL* SECRET

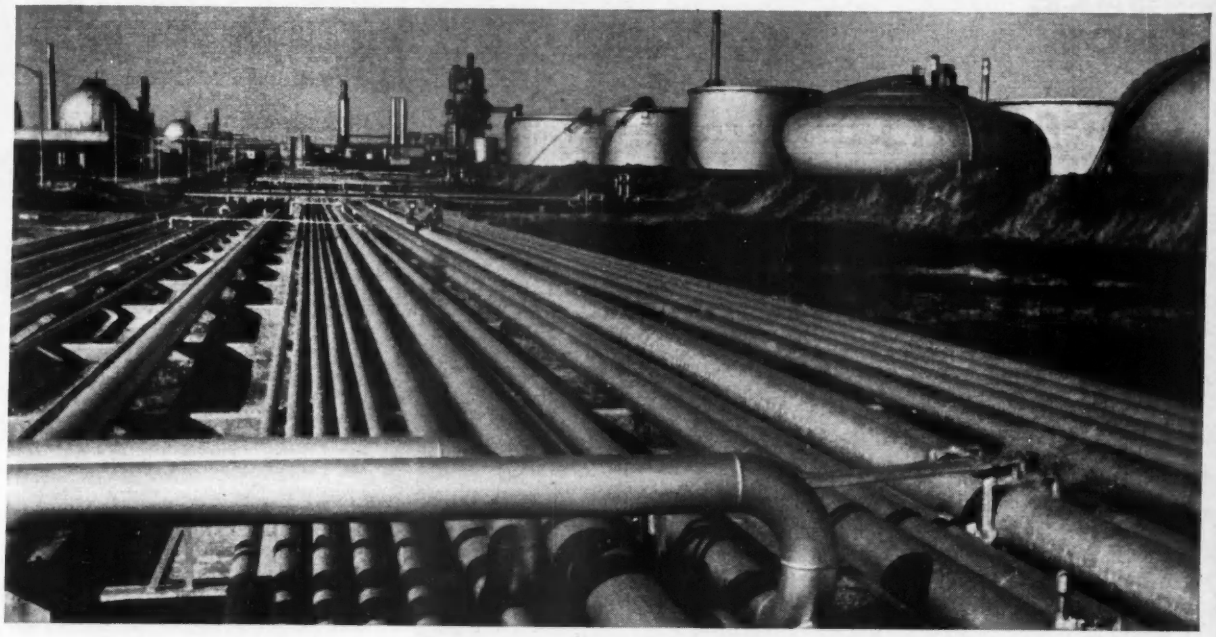
Dear Sir:

I read your article, "Secrets of the Winningest Corvettes" in the July MOTOR TREND with dismay.

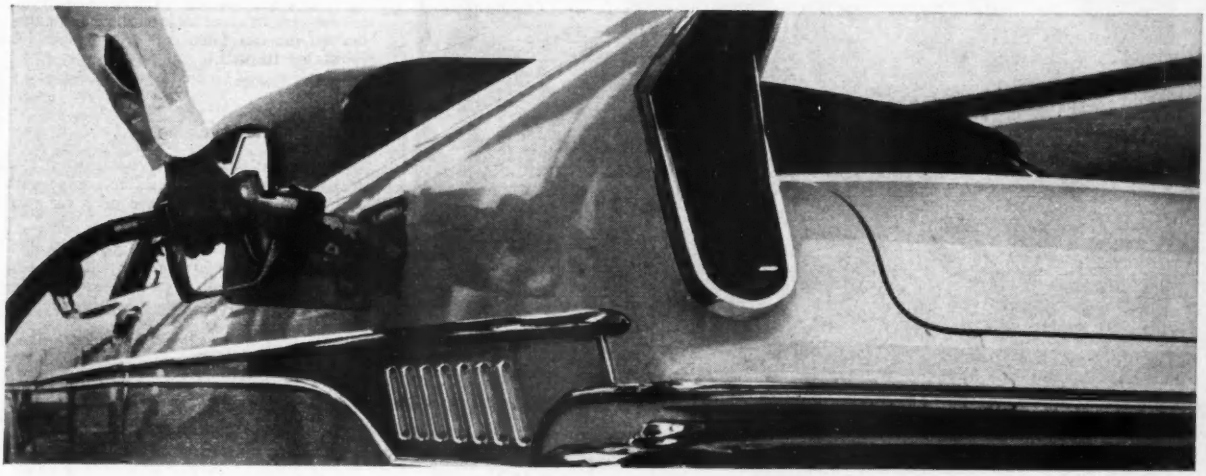
It seems you neglected to mention the *real* secret of the winningest Corvettes—

continued on page 12

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A gasoline can only be as good as the refinery that makes it. That's why new Flying A 100+ is the top-performing gasoline of the day. The most advanced refinery in the world makes Flying A. Completely modern equipment, electronic controls, more efficient refining methods are used to bring you this higher-octane gasoline at a lower price.

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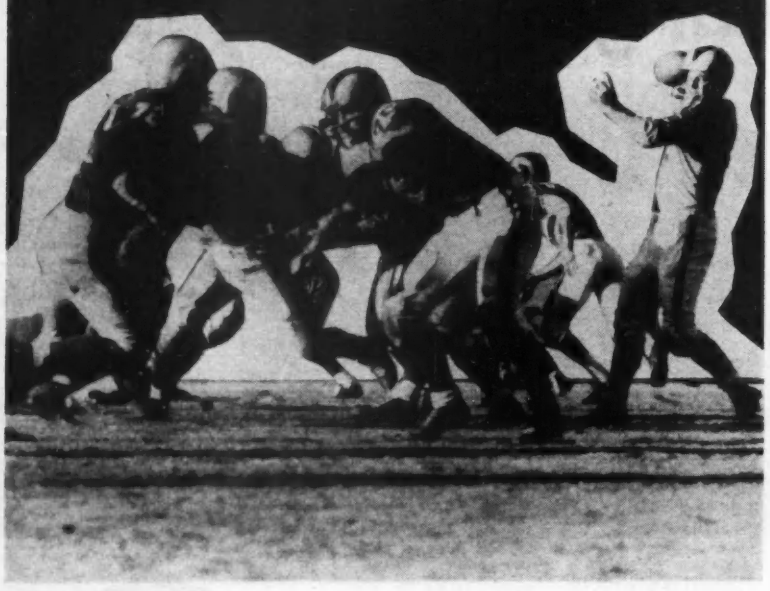
1960 PRO FOOTBALL

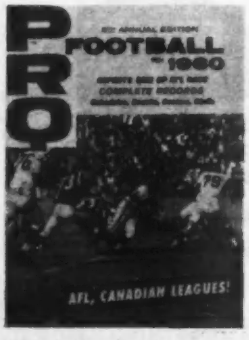
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Letters

continued

100 cubic inches over the 300-SL's and Ferraris!

Steven M. Jayson — Miami Beach, Fla.

ANY MORE ON STEAM?

Gentlemen:

Some time ago you carried an article on a possible revival of the steam car. I have not seen anything more on this since, except the article on the Stanley Steamer in the *Reader's Digest* last year.

Anything to report? Is there any company that can supply parts to build such a car?

Howard M. Wenner — Oil City, Pa.

Nothing specific on steam cars has materialized in recent months. There are no indications that such an automobile, either complete or in kit form, will be offered to the public in the foreseeable future. However, a steam conversion unit for conventional cars is available from Shaw Mercantile Co., 21 Sutter St., San Francisco 4, Calif.—Editor.

BROILED AND BAKED

Sir:

I would like to second the observations of G. F. Reynolds (July MT) and add another Big Three innovation we can do without—the four square feet of roof where the driver cannot escape the sun for more than an hour or two a day, either searing his eyeballs or broiling the back of his neck. And his rear seat passengers haven't a chance.

If a person wanted to drive sitting out in the sun all day, he would get a ragtop and let the top down and do a proper job of baking himself.

Onus M. Comer — Novato, Calif.

GETTING TOO MUCH STOP

Gentlemen:

In Chuck Daigh's article in the July MOTOR TREND he states, "A competition lining should never be used on a car with power brakes." Why?

H. A. Bornefeld, Jr. — Houston, Tex.

The function of power brakes is to increase the amount of pressure applied to the brakes. With a competition lining, this added pressure would cause a dangerous tendency to lock, eliminating true braking control.

To put it another way, a quick stop with power brakes and a competition lining would throw the driver and front seat passenger right through the windshield.—Editor.

SHIFT TO STICK

Gentlemen:

I am the owner of a 1957 Chevrolet V-8 with the Turboglide automatic transmission. When the car was 10 months old, the Turboglide was repaired to the tune of $120 or so. Now it appears the process must be repeated again, which makes me sick.

I would like to know if I would obtain satisfactory results if a stick shift were put in the car.

Ray Dimbath — South Miami, Fla.

A manual transmission requires far less maintenance than an automatic. However, the cost of switching from one type to the other is prohibitively high and would more than offset any savings you could expect.—Editor.

FASTER PICKUP FOR LARK

Dear Sir:

About two months ago I purchased a '60 Lark convertible. This car is equipped with standard rear end, automatic transmission and two-barrel carb. With the shift lever in both DRIVE and LOW, acceleration is very poor.

What could I do to get more pickup?

Robert Schaefer Muskego, Wis.

Assuming that your car is a Lark V-8, you can install the factory power kit, consisting of a four-barrel carburetor and dual exhausts. This boosts horsepower from the stock 180 to 195. Another possibility, still sticking with Studebaker equipment, would be to substitute one of the optional rear axle ratios, 3.31 or 3.54, for the stock 3.07. This will lower overall gearing for better acceleration, though at the expense of fuel economy.

For an all-out conversion, one of the easiest techniques is to replace the Lark V-8 engine with a Hawk unit.

Beyond these changes, there are all of the traditional methods of engine modification. The Studebaker V-8 engine is unusually rugged and will withstand a considerable degree of "souping."—Editor.

TUCKER MEMORIES

Dear Sirs:

The letter from a reader in a recent issue of MOTOR TREND pertaining to the "wonderful" automatic transmission in the Tucker car serves to remind me of all the mis-information that went around for years about this car.

I carefully examined a Tucker many years ago. Without commenting on its performance or quality, as I never rode in it, it was mechanically conventional in many ways. It used a Dodge or Chrysler fluid drive, coupled to a Cord transmission and differential assembly, and using the Bendix preselect control (Electric Hand, as Hudson called it).

Preston Tucker just didn't have enough money to really get started. Twenty million dollars was a drop in the bucket compared to the money (rumored 135 million) that Kaiser spent before he got into production.

Daniel Gross Tampa, Fla.

WHITHER WILLYS?

Dear Sir:

I understand that the Willys passenger car was last made in America in 1954. Could you please tell me where it is produced now? Also who handles them in the U.S.?

Bob Judd Livermore, Calif.

The last Willys passenger car made in this country was the '55 model. From time to time, there has been talk of producing the car abroad, especially in Argentina, Brazil and Israel, where Kaiser-Willys has facilities. However, to the best of MT's knowledge, the idea has never progressed beyond the planning stage.—Editor.

DON'T MESS IT UP!

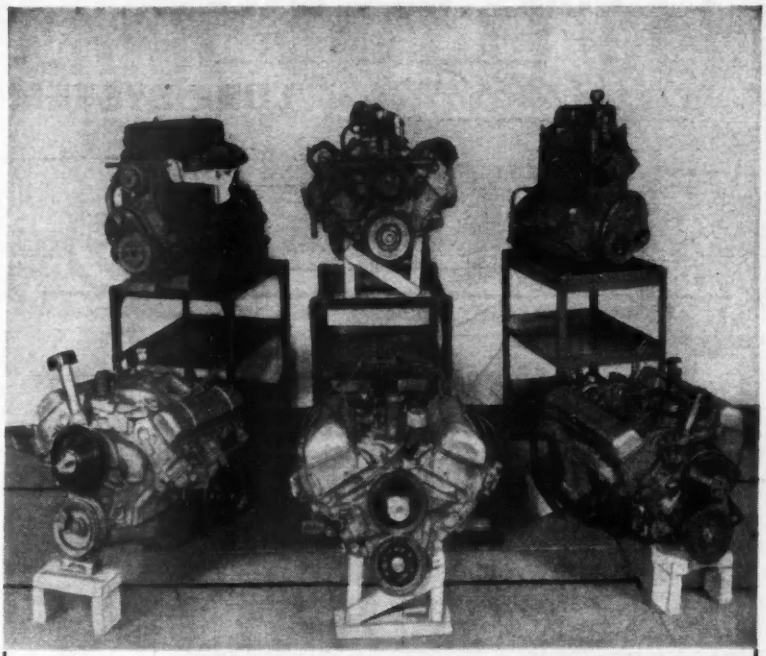
Dear Sir:

Thank you for making a mess out of the best-looking car of 1960, the Valiant. The big "V" is perfect in stock condition—it does not need louvers in the hood or a chicken-wire grille. It's not a police car, so why have spotlights and aerials?

Why hide the wheels with fender skirts? Why have exhaust pipes on the outside like a truck? The stock hub caps not only look better, but they help cool the drums. Why do anything except enjoy the beauty of the best-looking car of them all?

Your article on "Customized Compacts"

continued on page 14



Typical group of various types and makes of engines ready to be mounted on dynamometer stands for testing. Every important make of late model engine, as well as experimental engines of the future, are constantly being tested in Quaker State's Automotive Engine Laboratory.

Quaker State is proved best in the engine lab ...and on the road!

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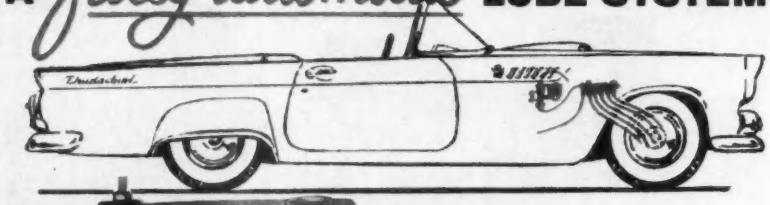
Quaker State's research laboratories have prepared a technical bulletin on British and European sports cars and passenger cars. For free copy send us your name and address and ask for Bulletin P-952B-4.

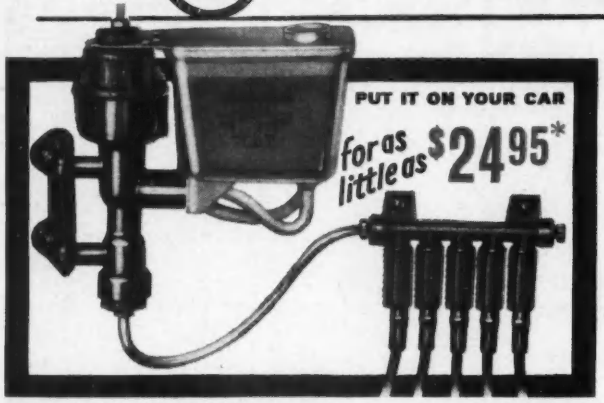
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MAKE & YEAR	STD. TRANS. Man. Steer.	STD. TRANS. Pwr. Steer.	AUTO. TRANS. Man. Steer.	AUTO. TRANS. Pwr. Steer.
Buick 59-60	16	16	15	15
Chev. 58-60	10	11	9	10
Ford 57-59	14	12	11	9
Ford 60	12	10	11	9
Olds. 59-60	17	17	17	17
Pont. 58-60	13	13	13	13
Ply. 57-60	10	10	8	8
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Letters

continued

should have left out the Valiant. It might give some teenager or immature adult some bad ideas.

Peter Rudd — Madison, Wis.

HANDS OFF!

Dear Sir:

It is undoubtedly true that automobile styling and restyling are largely a matter of individual taste and opinion. I have always felt that customizing is something to be taken with reservations, to say the least. In fact, most examples of the "art" are, as far as I am concerned, rather garish examples of change for the sake of change itself, and seem to serve little, if any, functional or esthetic purpose.

However, when I picked up your July issue and saw the custom Corvettes, my opinion was reinforced a hundredfold. With some exceptions (namely the Rodden car and to some extent the Clews machine), the cars depicted were bad taste in the extreme, and an example of hundreds of dollars wasted to deface and defile a basically beautiful automobile.

If you want to deface a common billboard, all right, but in the name of good taste, keep your cotton-picking hands off the Mona Lisa!

Douglas Birdzell — Washington, D.C.

DIFFERENCE OF OPINION

Gentlemen:

In your article on the Corvette sportscar, I find it impossible to agree with the statement that a Corvette "purely outhandles" a Ferrari Berlinetta. This is pure nonsense.

In my opinion, and many others will certainly agree with me, the Ferrari Berlinetta far outclasses the Corvette in every respect. Results of many races in which both Corvettes and Berlinettas have competed show that only an exceptionally well prepared Corvette in the hands of a skilled driver has a good chance of beating a well prepared Berlinetta.

At Sebring this year, the Berlinetta coupes and California roadsters "walked away" from the Corvettes, both on the straights and in the turns. These two models sewed up six of the first ten places overall. Where were the Corvettes? The only one remaining was in 16th position. Sebring was a fiasco, as far as the Corvettes were concerned.

You must also realize that the Berlinetta engine has only 180-cubic-inch capacity, yet it belts out 280 horsepower! I think that speaks for itself.

I must admit that Corvette body styling is nice. However, it is very pretentious and cluttered compared to the clean, flowing lines of a Ferrari. I consider the Ferrari to be the most beautiful and roadable car in the world.

Wayne Williams — Fort Lauderdale, Fla.

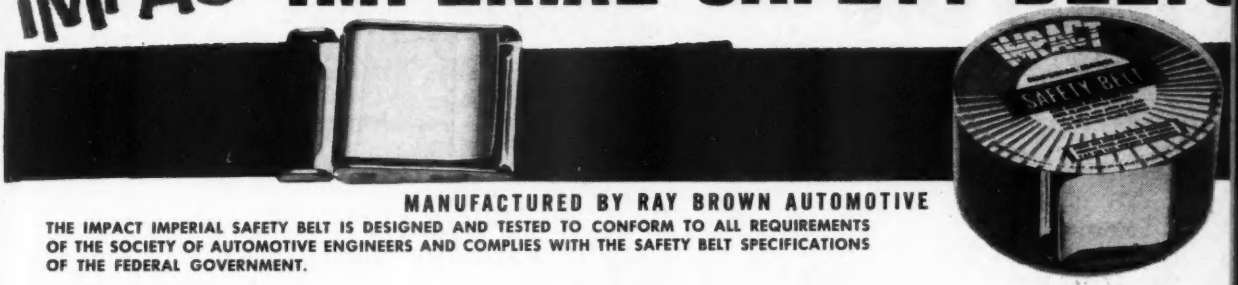
Editor:

For an automobile magazine purportedly in the know, I am quite surprised to discover that you aren't very knowledgeable about cars.

To wit (July MT): Corvettes *don't* handle well, except in contrast with American cars and some of the poorer imports, as is evidenced by the innumerable wins over Corvettes by Ferrari GT's, Porsche GT's, even AC-Bristols and an occasional Mercedes 300-SL. And the cost of a full-race AC or Porsche is no more than that of a full-race Corvette.

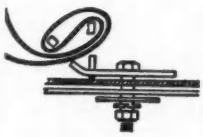
Howard Smith — Fairfield, Conn.

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Designed for your comfort and safety—simple do it yourself installation requires but 30 minutes, for two belts, in the average automobile. The floor mounting hardware is designed for universal application on all automobiles and is accomplished by drilling only two holes in the floor panel for each belt.
This superior floor mounting bracket assembly is manufactured from 4130 chrome alloy heat treated steel—threading of the webbing through the brackets assures a removable, slip free mounting which may be transferred to another car.

The impact imperial webbing is 100% nylon and does not utilize cotton or rayon fillers often found in other safety belt webbing. The imperial pebble grain webbing is a 6000 lb. tensile strength material, the strongest available, guaranteed colorfast and is not subject to mildew regardless of climatic condition.
The impact imperial buckle is a metal to metal design that clicks together affording a minimum 5000 lbs. of security and comfort. A novel arrangement of the buckle allows a simple adjustment of the webbing **at the buckle assembly** without removing the webbing. A simple pull of the adjustment tab increases or reduces the size of the belt for any member of the family, so important for the children.

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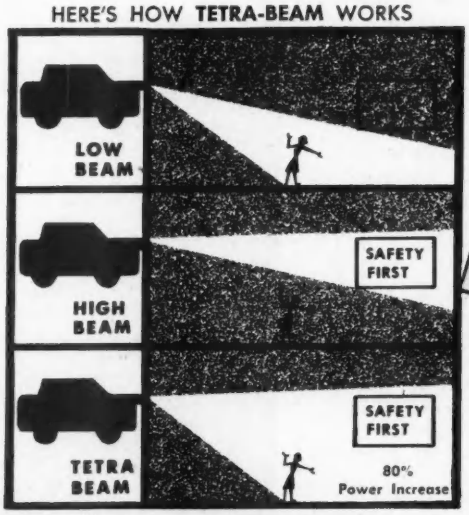
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MOTOR TRENDS

COMPACT DE SOTO STILL ON THE WAY

Slated for announcement sometime in 1961, the new car will be considerably larger than the Valiant and forthcoming Dodge Lancer. Its power source is said to be the oft-speculated-upon 330-cubic-inch aluminum V-8 that Chrysler has been considering for over a year.

CORVAIR EL CAMINO IN PLANNING STAGE

Careful analysis of the Ford Falcon Ranchero sales is being made by Chevy marketing people to determine the potential for such a unit. If it looks like compact pickups are in demand, a sub-truck will roll out of GM soon.

595-HP ENGINE GM EXPERIMENT

The most advanced bit of conjecture in the performance engineering field concerns itself with a rumored 348-cubic-inch four-cam V-8 on the test stands at GM. Blown by a modified GMC-671 it is reported to be delivering 595 hp! Reliability runs have delivered exceptional durability figures despite the tremendous pressures exerted upon the unit.

ALUMINUM STILL CAUSING PROBLEMS

Corvair has just made a running change from permanent-mold aluminum construction to sand-cast iron on its manual transmission case. Chrysler is ready to go back to cast iron for the slant Six engine manifold. Ford recently changed advance plans for its Cardinal four-cylinder engine from aluminum to iron block construction. There are many reasons. One unexpectedly tough problem with aluminum is that machined surfaces are easily damaged during handling and shipment. Also castings tend to be porous, giving troubles with leaks, blowholes and uneven structural strength. Engineers are working night and day to crack the bugs.

NEW COMPACT TRUCK MADE BY FORD

Production has already begun on an all-new small truck from Ford. The P-100 differs from the Falcon Ranchero in that it is designed as a stripped chassis for special-made bodies. Available in two wheelbases (96 and 102 inches), both of which are shorter than the Ranchero's 109.5 inches, it has a large 223-cubic-inch, 139-hp engine. The smaller Falcon powerplant is optional.

NO SPARE TIRES IN '62

Detroit sources report that at least one major manufacturer will have captive-air tires as standard equipment in another year. The costlier non-flattening rubber, now offered with some nine-passenger wagons, eliminates the need for a spare.

LUBRICATION THING OF PAST

At least one 1961 car has no grease fittings. A system of nylon bushings will do away with frequent trips to the grease rack. Special servicing will be needed on an average of twice in the life of the car.

CADILLAC NEXT WITH TRANSAXLE

Pontiac's Tempest will pioneer the use of transaxles in '61 but Cadillac will be the first standard-size car to appear with such a unit. It will probably come at 1962



Final judging of the Motor-Trend-Revell "Project Ideas" design contest saw Ford's Chief Stylist George Walker (left) and MT Publisher R. E. Petersen making selections. Results of the contest, which had 61,000 entrants, are found in the full story on page 44 of this issue.

announcement time though there is a distinct possibility that such a driveline will bow late in the coming model year —driving a limited production version of the GM luxury car.

OIL SUSPENSION UNDER STUDY

Citroen's oil suspension, as fitted to its DS and ID series, is now under consideration as a suspension system for one of the Big Three makes. The full-floating hydraulic components are being tested now and may appear in a limited production luxury car for 1962.

DUAL-GHIA READIES NEW LUXURY CAR

The new Dual-Ghia is in production. A styling prototype is in Detroit as a "sample" car for order taking by Dual-Ghia Motors of Detroit. It's a hardtop this time and not a convertible. Price is reported in the $11,000 bracket.

FACTORY TEAMS EYE AMERICAN RALLY

There is a strong possibility that factory teams will compete in the American International Rally this fall. Such participation in the USAC-FIA event would be the first all-out effort by major domestic manufacturers in motoring competition since 1957.

1961 MOTORAMA IS CONSIDERED

GM is giving serious thought to a revival of its popular Motorama exhibition as a showcase for the 1961 lineup. If OK is given, the show will open in New York in November.

BUYERS DEMAND MORE COMPACT PERFORMANCE

Dealers handling compacts say that they get more criticism on acceleration than anything else. Up to this time Detroit has tried to ignore the noise, not wanting to get started in a new game of horsepower hopscotch, but the customers are insistent. The result: more power kits in '61.

REAR-VIEW MIRRORS THAT FLOAT IN AIR

One 1961 car has a rear-view mirror that is glued to the windshield. The unique result is a unit that seems to be floating in mid-air.

FORD'S CARDINAL SUDDENLY LOOMS ON THE SCENE



JUST A RUMOR up till now, Ford's new small-small car, the Cardinal, has passed from the area of conjecture. Exclusive MOTOR TREND reports indicate that the car is ready for production. Ford dealers soon will be offering America's answer to the Volkswagen and the Renault.

The speculative sketch (above) of the Cardinal which appeared on these pages two months ago has been confirmed as quite accurate by more than one inside source. With a wheelbase of 96 inches (compared to 109.5 for the Falcon), this ultra compact will have a passenger compartment meant for four and no more. Height will be about 55 inches but there will be much headroom thanks to a flat floor. This latter feature is made possible by the fact that the Cardinal is modern Detroit's first front-wheel drive passenger car. Sitting far forward in the engine compartment is a cast-iron V-4 powerplant that is almost small enough to fit into a bowling ball bag. It displaces somewhere between 100 and 105 cubic inches. Transmission is a three-speed manual unit.

With a target price below $1700 the Cardinal originally was not scheduled for introduction until the 1962 model season. But most of its production problems have been solved and the Dearborn "bug" will be on the highways before the Fall of 1961. Those first highways may be north of our borders for the Ford sales people now want to try the car on the Canadian market. By next Spring the Cardinal, disguised under a Taunus nameplate will make its debut in the showrooms of Ford of Canada. But, if the accelerated pace of its past development is any criterion, Ford's small-small car may drive into the domestic scene long before its planned date.



The man who didn't WYNN!

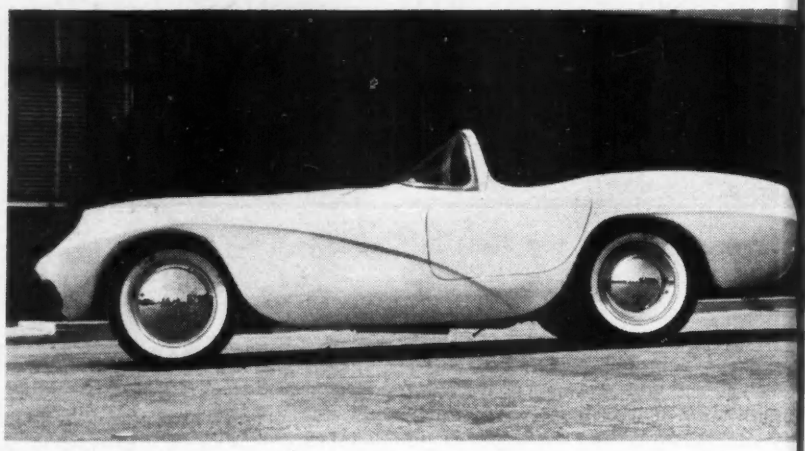
He never paid any attention to his car's radiator until the day it literally 'blew its top'. Because Wynn's Radiator Additive offers *complete cooling system protection in one can*, it would have saved him expensive repair costs, aggravation and the inconvenience of being without his car during the repairs. Now is the time, before winter starts, to avoid costly repairs. Wynn's Radiator Additive seals leaks, prevents rust and corrosion and keeps the entire cooling system clean and trouble-free.





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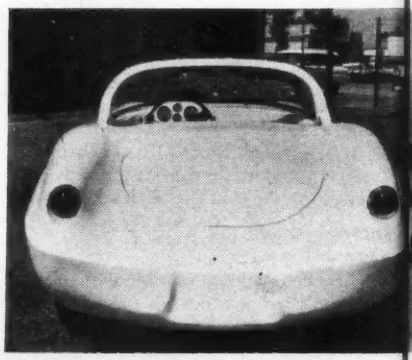
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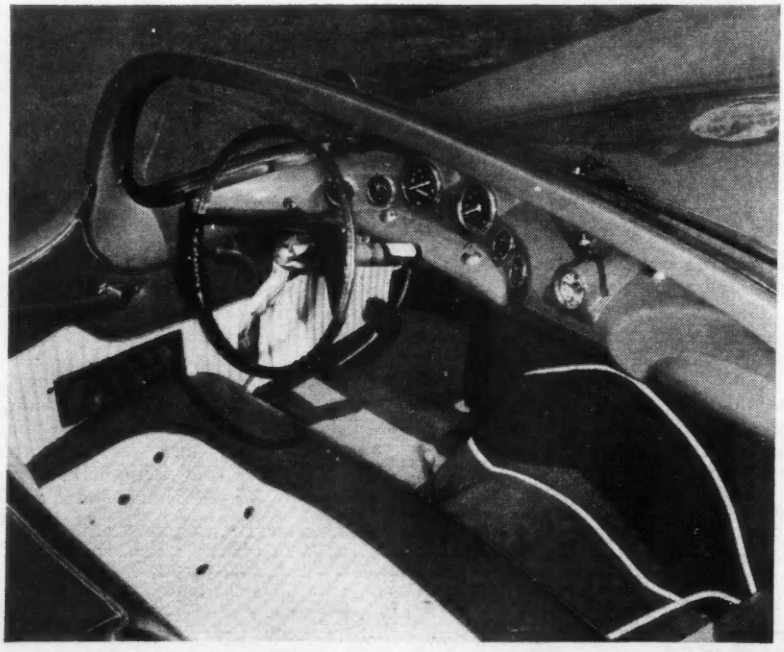
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GREATER GLASS

new custom bodies give the enthusiast increased choice



Full instrument cluster aids drivers of La Dawri fiberglass body shells. Trunk lid and hood are molded separately.

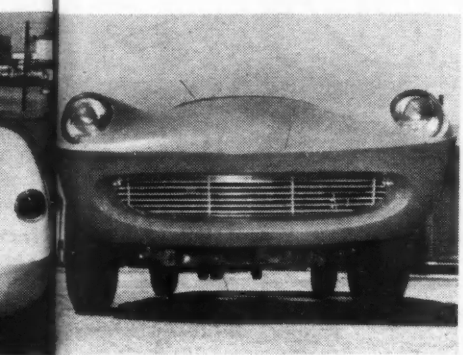


THOSE AUTOMOTIVE enthusiasts who wish to change the appearance and styling of their cars to the modern, sleek lines of the racy sportscar, now have a larger selection from which to choose. La Dawri Coachcraft of Long Beach, Calif., has announced the introduction of two new models of its popular fiberglass body shells—Sebring and Del Mar.

Both are styled the same, with a Maserati look, but vary according to the wheelbase. For instance, the Del Mar is just right for the smaller cars, like Alfa Spider, Triumph and Austin-Healey, with the base of 84 to 92 inches. The Sebring, on the other hand, is crafted for Volkswagen, MG, Morgan, Saab, and Sunbeam, with bases varying from 92 to 98 inches.

The two new shells are lightweight and small in price, running from the basic tab of $395 to $520, depending on the type and number of optional accessories desired.

In addition to the new pair of shells, La Dawri continues to manufacture three other bodies — Conquest, Daytona, and the Quest QT.



Maserati-styled grille is one of the outstanding features of new Del Mar. Buckets for headlights are built-in.



Conquest shell features a split grille with parking lights placed in extreme corners. The purchase price is $395.

WINNERS always choose





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☐ **HAIR DRESSING**

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Really tames and trains all hard-to-manage hair. Keeps unruly hair in place all day. Treats hair with lanolin and other beneficial ingredients.



☐ **BUTCH WAX**

Rated best for Crew Cuts, Butches, Ivy League and all short or stubborn hair. Has TRIPLE Lanolin, exclusive with LB. Never Sticky.



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If you can't find LB in Midwest or East, ask your drug or food store manager. Or send 25¢ for postpaid travel size of Butch Wax or Pomade only. Specify product.

NEW CONTEST

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plus



2nd Prize Go Kart Cycle *plus* **25 additional prizes of all 4 LB hair grooms.**

$119.00 Model

$219.00 Model

1st Prize FAMOUS Go Kart

COMPLETE—READY TO GO-GO-GO

— — HERE'S ALL YOU DO TO WIN! — —

Simply make up a two line rhyme about any LB Hair Groom:

EXAMPLE: *LB Butch Wax keeps every hair in line*
so now my hair looks mighty fine

Send your entry with any part of any LB label, carton top, or facsimile to LB LABS, Dept. M, Box 430, Glendale 4, Calif. Contest ends Sept. 30, 1960. Decision of judges is final. Entries become property of LB LABS and cannot be returned. Entries judged on aptness and originality of thought. Duplicate prizes in case of ties. Winners notified by mail.

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MOTOR TREND

September/1960

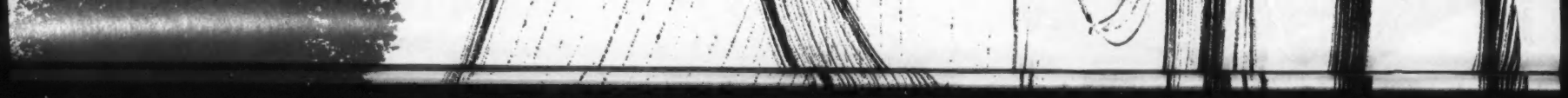
'61 cars

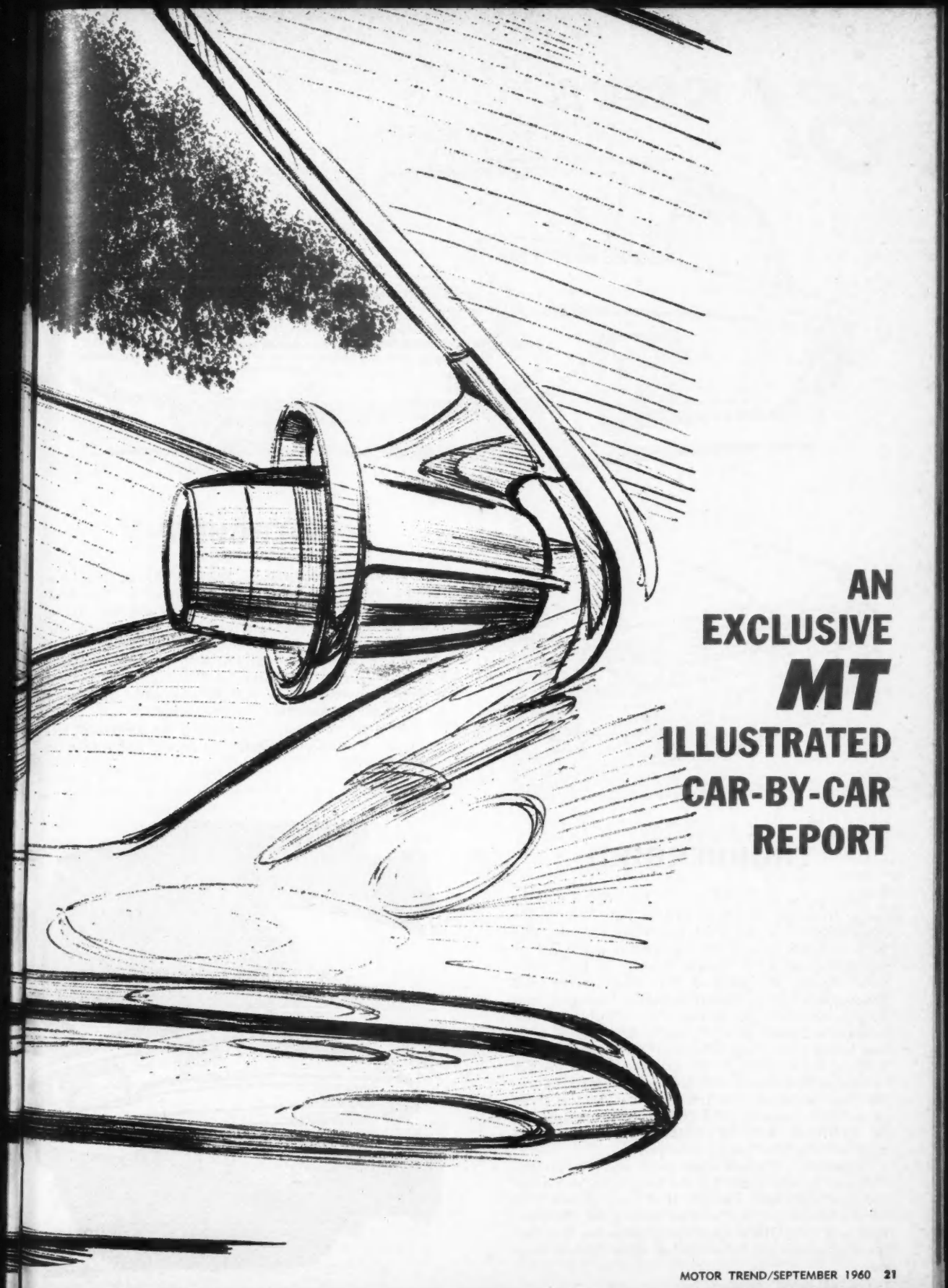


Never before in the recent history of automobiles have so many cars been waiting in the wings. Detroit is about to unveil 28 new performers. But even more important than this increase in number is the fact that the 1961 cars will feature important breakthroughs in engineering. All-new engines, some smaller, some larger than customary, will destroy the old cliches of powerplant design. Such dream items as transaxles and self-contained lubrication systems are about to become reality. It's a year of revolution that promises even more advancements in its wake.

On the following pages are our final speculative reports. They are based upon a year's study of the Detroit scene by our top correspondents. As in the past, their accuracy promises to be most high.

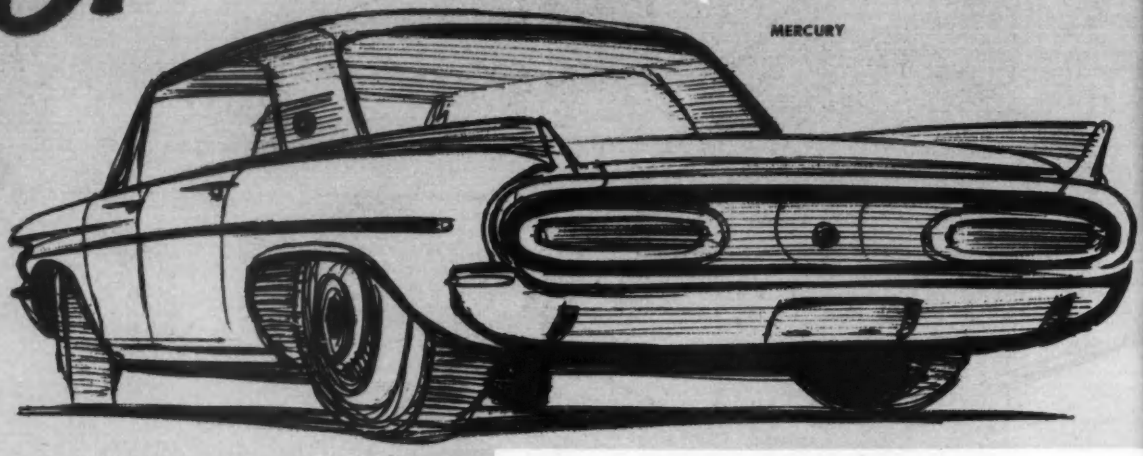




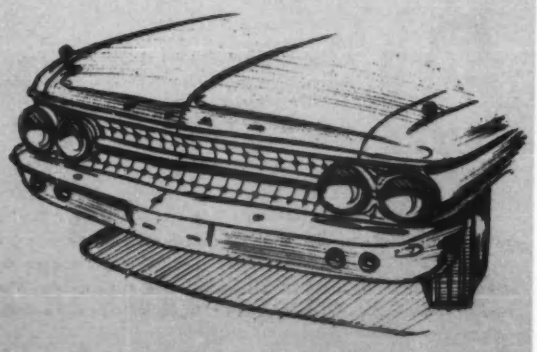


AN EXCLUSIVE *MT* ILLUSTRATED CAR-BY-CAR REPORT

'61 cars



MERCURY



FORD

MERCURY

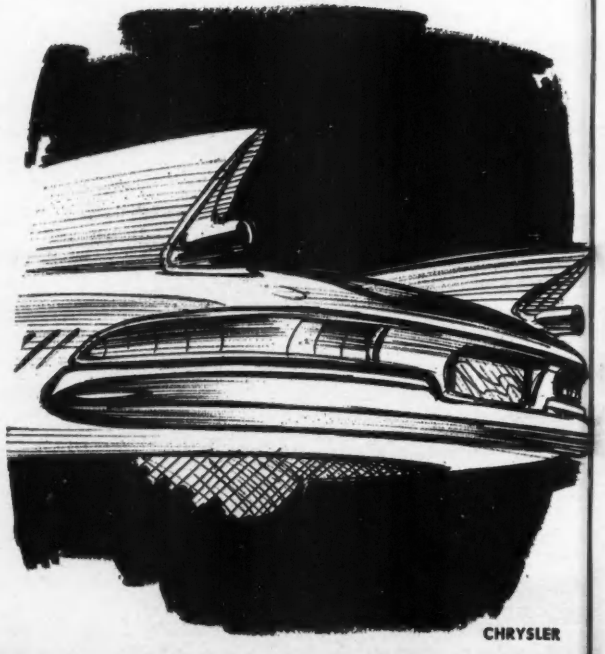
A number of sources have predicted that the Mercury will revert to the status of a "glorified Ford" in 1961. Granted, the Merc will lose some of its large proportions, but it will remain a car with a distinct personality. Based upon the Ford shell, it will have many styling features of past Mercurys and, surprisingly, Lincolns. Most of the Ford engine options will be available, including the high performance "police" special.

In short, the Merc is following the successful example of the Dodge Dart and should sell within its price range.

THUNDERBIRD

The biggest styling argument for 1961 is sure to center about the new Thunderbird. With body metal completely reshaped from the beltline down, this 'Bird emerges as one of the wildest examples of the styling school of George Walker. A long, long hood sweeps out beyond the front wheels and drops down to a pointed nose section that goes one step farther than the '60 Fords. An integral bumper and grille recall some Eldorado Broughams of a few years ago. Huge round taillights add a final touch of Ford styling in the extreme. Inside the car remains a four-seater with the same basic configuration that has made it a family car for the last three years. Both hardtop and convertible versions will be available, but the optional sunroof will be dropped after the 1960 model year.

Suspension, transmissions and engines go unchanged for the year, but the long hood section of the new body seems to hint that the rumored Ford front-wheel-drive unit will be pulling the Thunderbird very soon. The majority of guesses say that that announcement will be made just about a year from now.



CHRYSLER



BUICK SPECIAL

All three of GM's new compacts will use the same modified-Corvair body shell. Buick's little one bases its unique personality upon a front end treatment that sees hood and fenders slope to a sharp point, not unlike the frontal area of the 1960 Fords, The rear end is quite simple with straight lines and single round taillights.

The Special's powerplant is a small aluminum V-8. Weighing less than 400 lbs., this engine will have a bore of 3.50 inches and a stroke of 2.80 inches, resulting in a displacement of 215 cubic inches. As with the Olds F-85 the horsepower figure should approach 150.

Another mechanical feature of the Special is a miniature version of the Dynaflow torque converter which will be offered as optional equipment. It is said that the deluxe compact will have torque tube drive with trailing arms, lateral track bar and coil springs—a setup much like that on the big Buicks.

The Special will be offered in sedan and station wagon versions. A convertible has not been mentioned as yet.

RAMBLER

One big change in a year's time is more than par for the course for American Motors. The new American has received most of the styling attention this year, but both the Rambler and the Ambassador will receive token facelifts in the form of restyled grilles. The treatment of the latter tends to give this deluxe model much more of a distinct personality than it has had in previous years.

The mechanical side of the picture indicates no changes at all. There have been reports of modernization of the six-cylinder engine, but this does not appear to be an immediate prospect.

VALIANT

Now recognized as a Plymouth and not a separate entity within the Chrysler Corporation, the 1961 Valiant has undergone very few changes. Side trim and grille are slightly altered, but it will take a sharp observer to catch the difference. The big news of the year is the addition of a two-door hardtop to the line.

Many expected Chrysler to manufacture the Valiant's slanting Six engine entirely of aluminum by '61, but unforeseen problems with that metal on the assembly line have changed the timetable. The block should be cast from the light alloy in not too many months.

CORVAIR

The "Car of the Year" for 1960 will mark its first birthday with the introduction of more body styles and some new power options. There's a brand new station wagon that, contrary to most speculation, does not look like a bus. Despite the fact of its rear engine, Corvair's new utility model will have the appearance of the conventional wagon. Clearance of the powerplant necessitates a rear floor some four inches higher than normal, but this will be the only wagon to have storage area under the hood. The bus-like body will make an appearance also but this particular style will be sold as a commercial or pick-up vehicle. Ready for introduction later in the year is a convertible based upon the regular coupe body.

Styling changes on the regular body almost defy recognition. One of the biggest developments is the increase of front storage area made possible by the movement of the spare tire to the engine compartment. The powerplant itself will be offered with an optional power-pack and four-speed transmission. (A preview test of these features will be found on pages 38 through 41 of this issue). The heating system will switch from gas to hot air.

'61 cars

OLDS F-85

With a wheelbase of 112 inches and an overall length near 190 inches Oldsmobile's new compact is a deluxe front-engined small car. The car has been designed around the standard Corvair shell but increased length and sculpturing in the side panels give it an altogether different personality. Through grille and trim there is a strong family resemblance to the bigger Olds for '61. Preliminary guesses place the car in a price category close to the higher-priced standard-sized Chevrolets.

Of particular interest in the F-85 is the new little aluminum V-8 which it shares with Buick's compact, the Special. Displacing some 215 cubic inches it will no doubt have a "regular-fuel" compression ratio of about 8.5 to 1. The initial horsepower rating should approach 150 hp but this can be upped with a special power-pack that will be announced soon after the car's debut. As with the other compacts, a manual transmission is standard and automatic is optional. The latter will be a new three-speed Hydramatic that weighs only 90 lbs.

A station wagon of conventional styling will be announced along with the sedan.

FALCON

Ford has a good thing in the Falcon and knows it. Their successful compact will rush into its second year with very few minor trim changes. The grille cavity will remain the same but the grille itself will have a new shape which has a strong resemblance to an electric shaver head. There are no changes in the rear while a new medallion keynotes the side treatment. The 90-hp Six will still supply power but it seems logical that Falcon buyers will be able to pick the increased displacement Comet engine as an option.

DODGE

With the Dart and the Lancer adding new youth to its family the senior Dodge is going to relax a little in '61. Only one series will be offered and, except for a few identifying marks front and rear, it will bear a very strong resemblance to the Dart. Transmission and engine options will remain much the same but there will be a new Sonoramic dual-quad carburetion setup with shorter manifold tubes that "tunes" in the 4,000 to 5,000 rpm range rather than the current 2800 rpm. The 383-cubic-inch engine is to remain the largest available for Dodge.

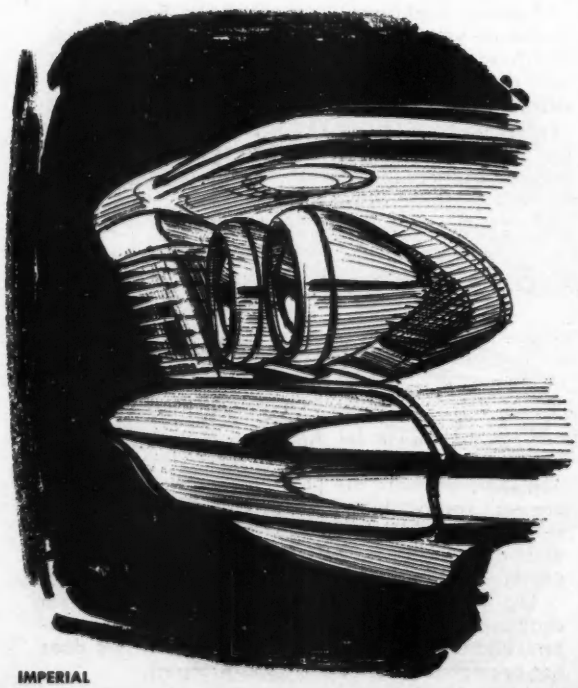
COMET

Just six months old, this new compact is not ready to nor will it change. A slight variation in grille texture and some new trim items (some of which seem to be borrowed from older Thunderbird models) mark the '61s from the '60s. One major improvement has been made under the hood. The standard 90-hp Falcon engine, which didn't have enough poop to move the added weight of the Comet with pep, has been modified. Displacement has been boosted from 144 to 170 cubic inches—a change which should answer most of the original criticisms of the car.

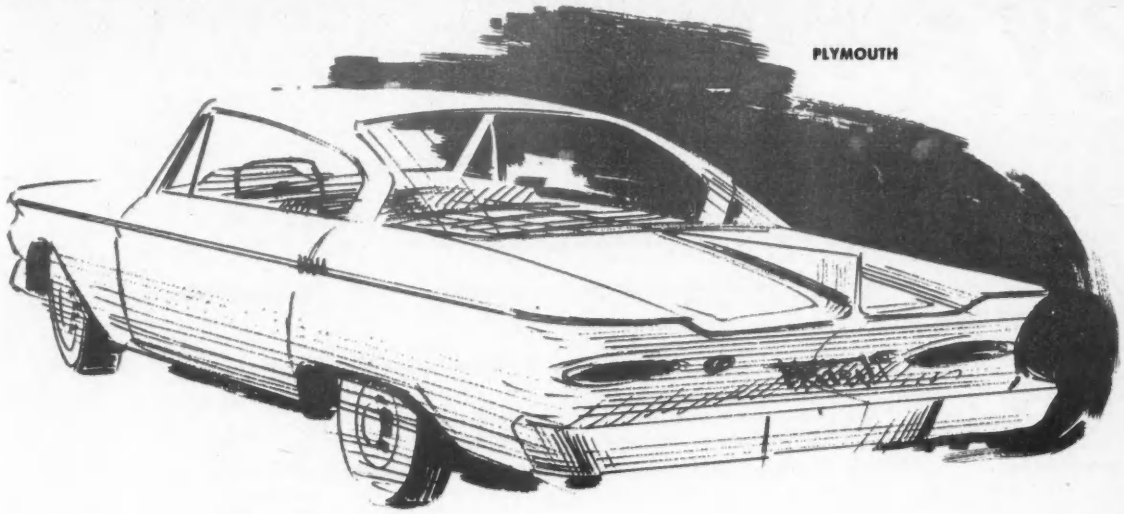
CHRYSLER

Least changed in appearance of any of the big cars of its parent corporation, the Chrysler still boasts big fins and the 300-type grille. Front headlights have been cocked at a slanted angle and encased in chrome. Engine availabilities have been a well kept secret, but a big new V-8 is expected and the possibility that some of its components will be of aluminum is still very strong.

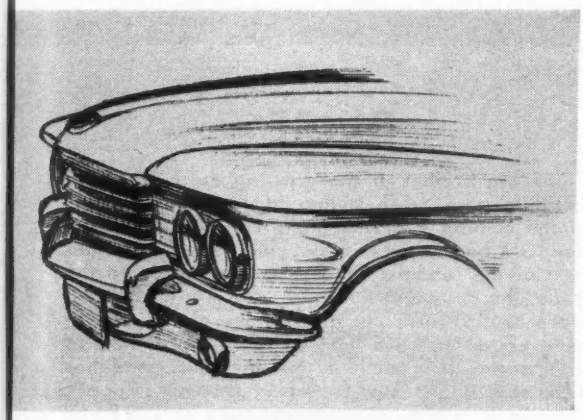
The 300-G is slated for an earlier announcement than normal, but there is the sad report that the optional four-speed transmission of 1960 will not be offered again.



IMPERIAL



PLYMOUTH



LANCER

DODGE LANCER

Newest member of the Dodge family, the Lancer is a not-too-disguised remake of the Valiant. A new grille treatment with a strong horizontal feeling is its real distinguishing point. The rear area is marked by the absence of the "donut" tire configuration that has been a trademark of the Plymouth compact.

Besides the sedans and station wagon body shells that have become familiar with the Valiant, the Lancer will also offer a two-door hardtop version. Prices of all models should be only slightly higher than comparable versions of the Valiant.

The smaller version of the slanted Six engine will be standard on the Lancer. Since this unit already has a displacement equal to the newly hopped-up Comet powerplant (170 cubic inches), it now seems doubtful that the Dodge people will worry about offering more power. It is not inconceivable, however, that the 225-cubic-inch version of the engine (which is now offered in the Dart) will become an optional item later in the year. Both manual and pushbutton automatic transmissions will be in the dealers' book.

FORD

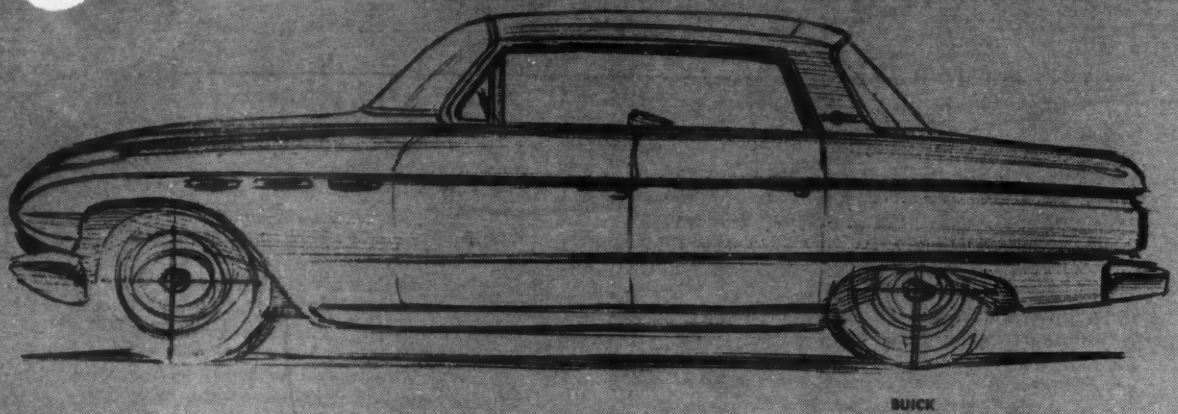
A new styling treatment will give the Ford a changed personality for 1961. The extreme dip down to the front grille is gone. The frontal area is much squarer and the appearance of the grille is very reminiscent of that section of some recent Cadillacs. Overall body configurations and roof lines remain the same but to the rear the large round taillights that have been such a Ford standard in the past have returned.

Engine developments have been concentrated at the top of the power line. The Ford engineers are determined to make their car the undisputed drag champion. The 352-cubic-inch displacement of the current 360-hp "police" engine is being raised to 390 cubic inches. Horsepower will match that fantastic displacement figure. The next necessary performance development is a four-speed manual transmission. The word on this desired option is not too good. It may not be available by announcement time but there is hope that it will be offered at dealerships before the 1961 model year is over.

DE SOTO

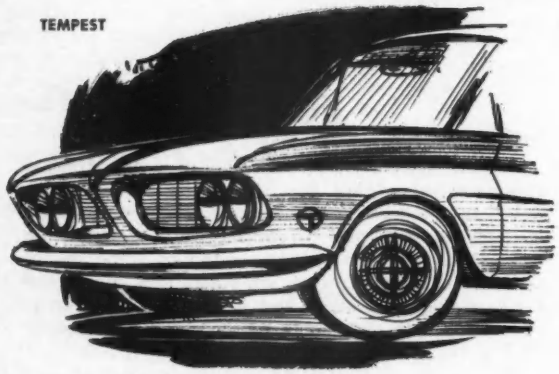
Most distinctive feature of this year's De Soto is a new frontal styling treatment which has that area divided into two distinct grilles, one on top of the other. The large canted fins still dominate rear end styling. In the area of power De Soto has undergone a process of deemphasis. Compression ratios have been cut so that new owners will be able to fuel up with the regular grade of gasoline. There is a chance that the new V-8 planned for the Chrysler will be offered as an option on the Adventurer.

'61 cars



BUICK

TEMPEST



BUICK

The big brother of the growing Buick family is counting upon fresh styling to capture new fans in the coming year. Its main variation upon the new GM body shell is a sweeping spear-head design of the fenders. There is a sharp drop to the grille, the design of which is relatively unchanged from 1960. Practically all vestiges of the current rear fender fins have been removed. In the field of engineering it is obvious that the Buick staff has been spending most of its time on the new compact. There are no changes expected beneath the body.

AMERICAN

The pioneer of the compacts has gotten more wear out of the original American body shell than car makers ever thought possible. But, as the politicians are now proclaiming, it's time for a change. The 100-inch wheelbase junior Rambler will sport an all-new skin in '61, but the basic dimensions, both inside and out, will remain very close to those of the original version. Styling will abandon the rounded lines of the past to give the car a squarer, more definite shape. First observers have come away with the impression that the new American has a strong styling resemblance to the typical small European sedan.

Both sedans and station wagons are definitely in the works and there is a report that a little convertible will be offered later in the year. If so, this will be the only new compact soft top for 1961.

Powerplants, suspension and transmission will remain the same for awhile. Supposedly American Motors has a new aluminum Six in the works but, like most of those experimenting with the lighter metal, they have come across some last-minute bugs. The new engine is very similar in design to the present optional ohv powerplant.

CHEVROLET

Most buyers seemed to welcome Chevrolet's return to relatively conservative styling in 1960. That trend will be followed again in the coming year. Although it has an all-new body shell the car will retain much of the identity that its current owners know. Grille and front areas are rather flat and square while the rear end sports a flat V-type fin. Small round tail lights in sets of from two to six designate the various series within the lineup.

One of the most interesting features of the '61 Chevy is in the usually unchanged area of the trunk. The lid is much larger than normal, opening from just above the bumper. Within the trunk floor itself there is a new big well that offers a novel and effective area for the storage of small items. All in all it is one of the most practical designs yet conceived for this important but neglected compartment.

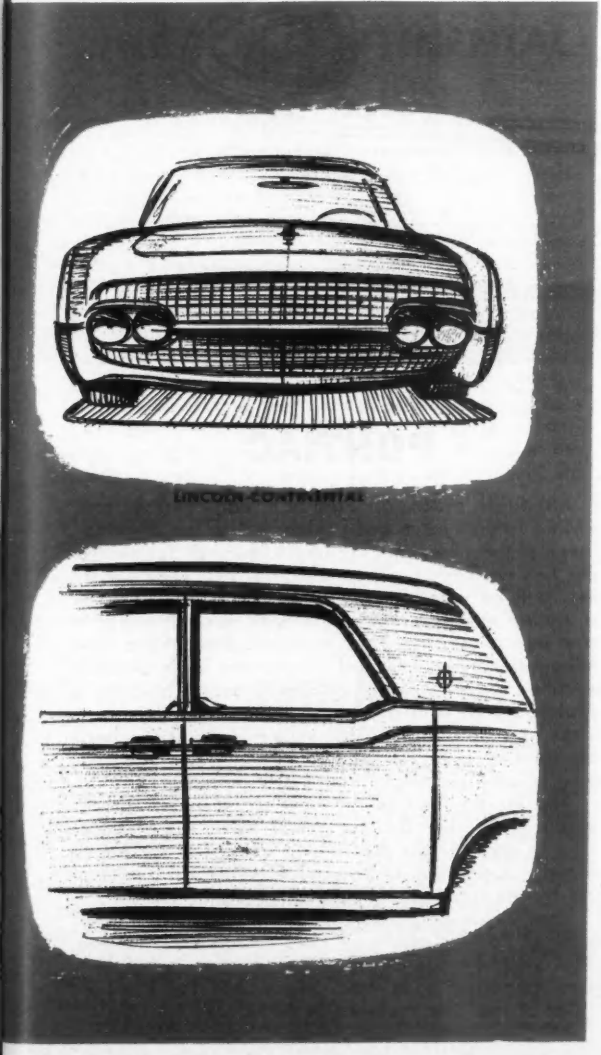
Chevrolet has done little to change any of its mechanical components. Reports of aluminum engine construction are premature. Of interest to the enthusiasts, however, are reports that several new options will be available to boost the horsepower of Chevy's big V-8 somewhere over 360.

PLYMOUTH

Chief goal of the Plymouth is more attractive styling. A major facelift has removed the controversial scalloping from the sides of the front fenders and, most surprising of all, sheared off all remains of side fins. It is a body with much more unity of appearance to the styling of Ford and Chevy.

No important mechanical changes are slated, but they say that Plymouth division may actually reduce their engine performance options. The fact is, there are just too many different part combinations going down Chrysler Corporation engine assembly lines to make the operation economically practical. It is likely that Plymouth's top horsepower rating (330 hp in 1960) will be raised for '61, but the day is past when you'll have a choice of six or eight different engines in one make of car.

Plymouth has continued to place high emphasis on its station wagons. These utility vehicles have played a great part in the Plymouth sales picture. The new versions resemble their past wagons but there is talk of some interesting innovations.



PONTIAC TEMPEST

Get ready to hear lots of talk about the Tempest. By our preview reports it is the car with the most radical new engineering and design concepts. Here is a car with two brand-new engines, a Four and an Eight! The latter is an option, the V-8 that powers the Buick and Olds compacts, but the former, the Four, is an exclusive with the Tempest. This 195-cubic-inch slant Four shares a great many components with the current 389-cubic-inch V-8 of the standard-sized Pontiacs. For more news on this powerplant see the speculative report that appears on page 52 in this issue. Another engineering innovation is a flexible driveline, shrouded by a small-diameter tube, which transmits the power from the crank to a rear-mounted transmission, coupled to a trans-axle arrangement.

On the outside it shares the same shell as the F-85 and the Special. Available as a two-door, four-door and station wagon, the new unit will bear a surprising front-end similarity to an earlier-model Pontiac. A beltline sculpturing follows the trend of most of the current GM products with a distinct continuous crease running from the headlight to the rear deck.

CADILLAC

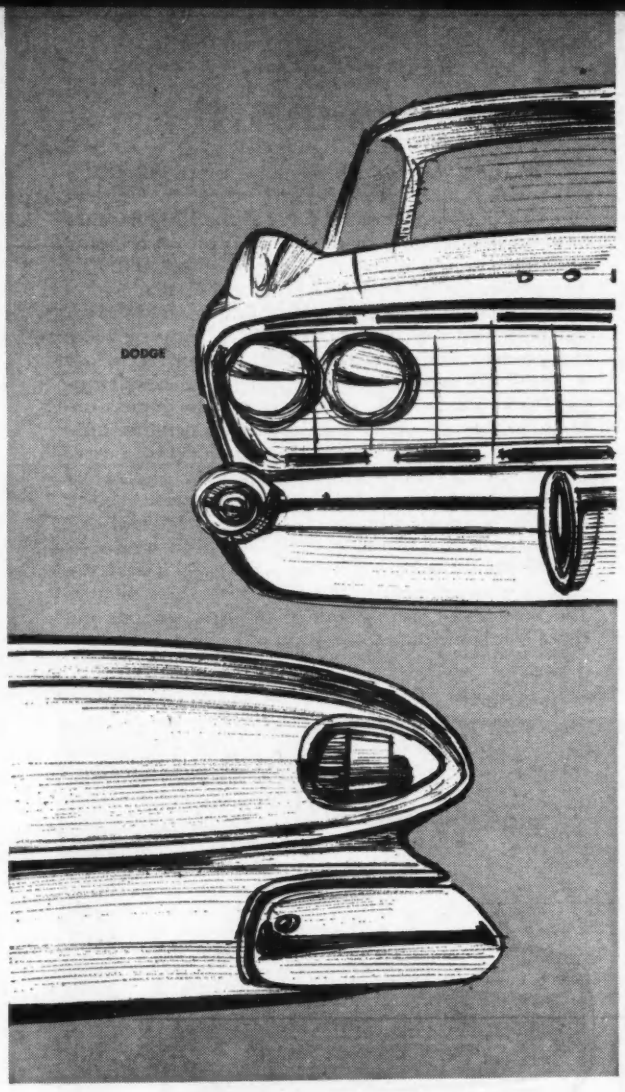
Detroit has become so compact-conscious that recent rumors have gone so far as to report that even Cadillac will market its own junior model. Those reports are not true. GM's big one will remain just that—the leading exponent of luxury in bulk. Although it shares the new General Motors' body shell, Cadillac will retain much of its present styling distinction including a large set of tail fins. Mechanical components are scheduled for little change except for the fact that there will be a new smaller Hydramatic unit which will give the car less of a floor hump.

CORVETTE

The long-rumored "all-new" Corvette will **not** be seen in 1961. Development and tooling budgets were just too thin. However, there will be rather extensive styling changes on the rear of the Corvette body. A good preview of these changes is the XP-700 experimental Corvette that was featured in the July 1960 issue of Motor Trend. The rear deck curves down to a sharp edge that extends around the body from one wheel cutout to the other. Below the edge are small round tail lights.

The good list of mechanical components that make up the sporting blood of the Corvette will not be lessened to any degree in '61. There have been reports of the discontinuance of the fuel injection option, but late modifications may save the system. Due for reintroduction are the optional aluminum heads that made only a brief appearance last year before production difficulties pulled them off the market. The standard V-8 will have an increased bore and stroke which will up displacement to 327 cubic inches and the horsepower rating should climb to 350.

'61 cars



DART

With one of the most successful first years in the history of the automobile industry under its belt, the Dart will bow in for '61 with a greatly altered countenance. Dodge stylists have reworked the rear quarter panels, designed a larger grille area and, considering the rather limited tooling changes involved, come up with an almost totally different looking vehicle. The major change is at the rear where a wild conformation that resembles an inverted fin rises sharply off of the rear fender. The suspension and powerplant/driveline components will all be familiar to current Dart owners.

OLDSMOBILE

Olds lovers will not be disappointed in the '61 version of their favorite car. Styling of the new GM body shell has all of the flair of the Rockets of old. Front fenders have an unusual vertical fin effect while the rear fenders taper down into a curved rear deck. The grille features small vertical bars set apart in a shadow box cavity. Single round taillights accentuate the simplicity of the rear. A major improvement within the interior is a new step-down front floor which gives greater legroom and much more comfortable seating. (Most of the new GM cars have this feature but not to the degree found in the Oldsmobile.)

An important feature within the heart of the car is a redesigned Hydramatic unit. Much smaller than previous automatics the new transmission is partially responsible for the greater interior room.

Still in the rumor stage is an all-new engine. Nothing definite has been reported as yet but there are strong indications that the Olds will boast exceptional new power within a year.

IMPERIAL

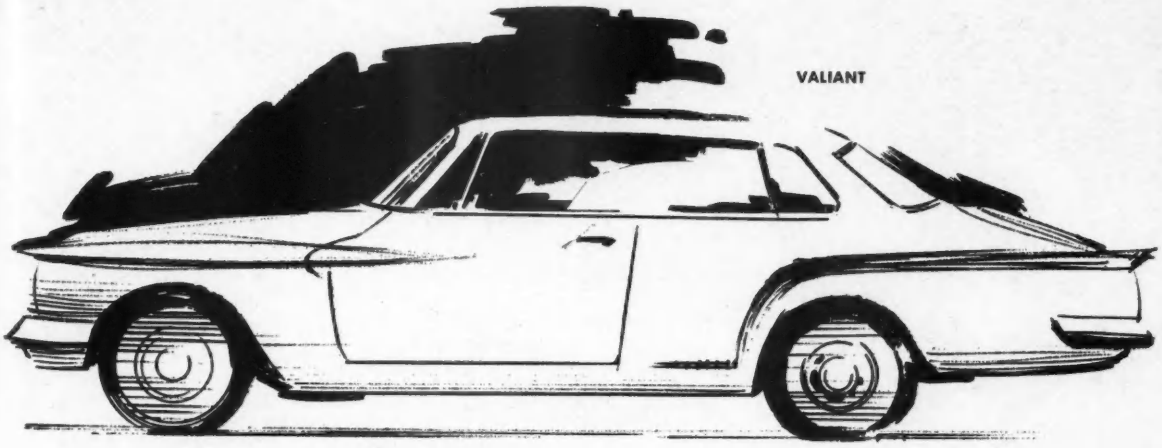
The "teaser" photo of the new Imperial which is featured on this month's MT cover should be all the proof necessary to say that the car is changed for '61. Imperial stylists are championing a new style of neo-classic design (see page 32) and their first offering can be classified by no other adjective but "wild." Every element, from headlights to fins, is big and bold and this feeling of massiveness is carried through to the car's interior. The powerplant will remain the soft, quiet version of Chrysler's big V-8.

PONTIAC

Although much of Pontiac's engineering and styling talents have been relegated to the development of the new small Tempest, the standard-sized car has not exactly gone wanting. This year's warrior will be a totally new version of the car from a styling standpoint—replete with new sheetmetal and interior styling. The first impression of the new silhouette brings to mind the current Ford Galaxie with its sharp, straight roof treatment. The side is sculpted with a large spear that sweeps from rear deck to front bumper. The grille maintains the horizontal sweep of the current model while the rear end is accentuated by small round taillights.

The Pontiac shares the new three-speed Hydramatic with other GM cars close to its price range. This in turn means that it will also offer increased interior room (due to less space restriction demanded by the transmission).

One important feature will remain the sole property of Pontiac again in 1961—wide-track wheels. This visible evidence of unique chassis personality and handling ease was responsible for Pontiac's "Car of the Year" award in 1959.

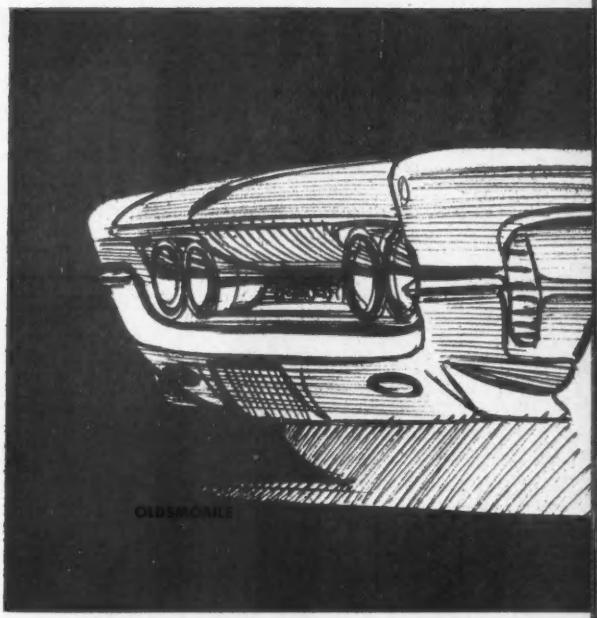


LINCOLN-CONTINENTAL

Lincoln will be back in the prestige picture again as soon as the moneyed set gets a good look at the car's all-new styling. Gone is the massive sculptured boat of the last three years. In its place is a limousine of simple, classic lines. The best word picture at this time is to say that the car is a "Continental Mark II sedan." Many of the features of that ill-fated prestige vehicle have been revived but on a larger and seemingly more commercial scale. First observers report that the car is very tastefully appointed with fine woods and fabrics, not unlike some of the luxury European vehicles.

The hood is very long, a styling-engineering feature which will probably cover a unique front-wheel-drive system in 1962. But for this year the current engine and transmission options will be retained. There is the possibility that many of the other mechanical components will be interchangeable with the Thunderbird.

For the time being only sedan versions of the car will be offered. It seems fairly certain that convertibles and hardtops are out for awhile.



HAWK

The days of the Hawk as we know it seem to be numbered. In recent years its famous name and styling have taken a back seat to Studebaker's much more popular compact, the Lark. Now that the time for modernization of the car is here it appears that the S-P officials will transfer the Hawk nameplate to a special version of the Lark. The new model will feature deluxe appointments and engine modifications which are capable of upholding the car's reputation in the performance field. Most Hawk followers should be pleased with the change.

LARK

Studebaker is taking two major steps forward in the development of its compact. Most important of these is the unveiling of a modern six-cylinder engine. Of an overhead valve design the new powerplant is said to give far better performance and economy than the old L-head.

In the styling department the basic Lark shell has been modified with the goal of getting the car out of the square, boxy category. Sides have been sculptured to reduce the height appearance while the grille has been cut down and widened to give a feeling of greater width.



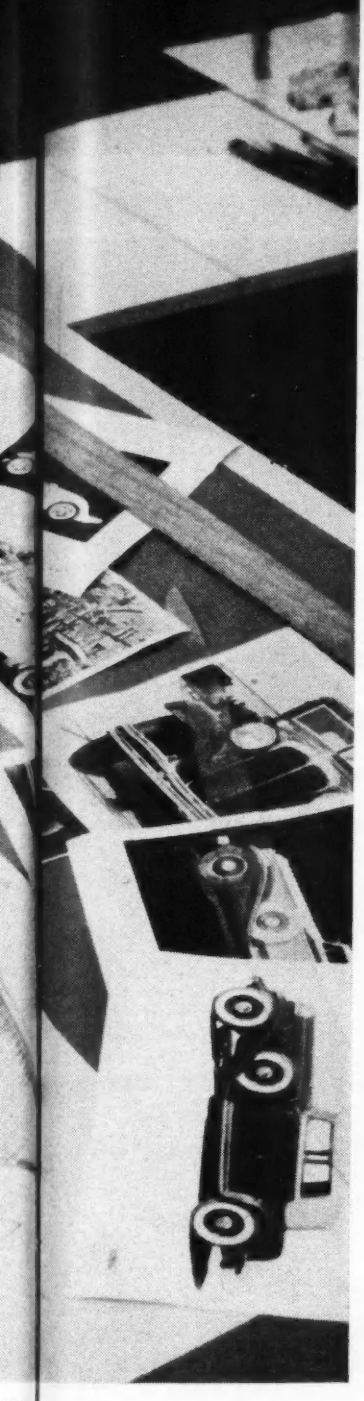
An Imperial stylist sketches that Division's '61 headlight. Chrysler claims that this unit is a look at the future.

by STAN LANSON

TAKE A LONG LOOK at the cover of this issue! Those free-standing headlights that grace the 1961 Imperial shown there may be the first indication of a whole new breed of automobiles that will be coming out of Detroit in the not too distant future. According to Robert Rodgers, Chief Engineer and Director of Product for Chrysler-Imperial Division of Chrysler Corporation, they represent the first step forward into what Rodgers terms, "a period of *honest* styling!"

Admittedly, a pair of headlights can hardly be constituted as a major advance towards the "integrity of design" that Chrysler and Imperial are reportedly shooting for but they do represent what is probably the beginning of one of the most unusual (and refreshing) approaches to styling yet envisioned by a U.S. firm.

Rodgers and his Chief Stylist, Don Kopka, with an assist from a young, progressive management, hope to accomplish such "honesty and integrity in passenger car appearance" by designing and building "modern classics"—cars that reflect excellent workmanship, classic lines—cars that appear to have been conceived with functionality as the primary reason for their being.



WILL THE CLASSIC LOOK RETURN?

A new trend in styling is starting. Detroit has re-discovered the age of elegant automobiles

The cycle of ostentatious, over-ornamented "Easter eggs" is about to leave us, says Rodgers, and the cars that were designed and sold in the last decade, those extravagant "juke boxes of the fifties," are about to give way to a new generation of sleek, practical and functional vehicles. His views on this rather timely subject are partially borne out, at least, in the products that are about to appear under the Chrysler and Imperial nameplates later this fall. The latter unit is, in his and Kopka's opinion, a definite move towards such a modern classic.

Logically, one might ask either gentleman: "What is a modern classic and how does one go about designing and building one?" Since the term "classic" is largely a matter of semantics, the two Chrysler officials justify their use of it by explaining the process of research and development that has gone into the styling.

The findings of a two-year public opinion poll among business and professional people in various parts of the country led Rodgers and his staff to believe that the public, or at least that portion of it who are potential customers for the luxury-type automobiles that are offered by the Chrysler Division, were more or less fed up with the gee-gaws and the multi-hued coloration of contemporary passenger cars.

The consensus of this vox populi appeared to read: "Give us functional design —not the fake, unreal swirls and circles of sheetmetal you now display and give us simple, practical interior styling—not boudoir-like trappings!"

In other words, the people who buy (or might buy) the Chryslers and Imperials of the future were, in a body, clamoring for more of the primary—more of the direct approach to design. Their arguments included such advice as: "If the grille opening is a necessity to allow cool air to enter and flow over the radiator then let it appear as a functional part of the car—don't try and disguise it as a chromed-over iron gate!" They also had a great deal of comment about such things as headlights—"Since they, too, are a necessity why bury them deep inside the folds of the frontal sheetmetal?"

Comments such as this instituted a deep personal re-evaluation of design theory by Kopka and his staff of stylists. Months were spent poring over drawings and photographs of the classics of the twenties and thirties. The Auburns, the Cords, the LeBaron Chryslers of that period were perused and studied. "What had made these cars become symbols of classic design?," asked Kopka and Rodgers, "Why had they retained their image of good styling despite obviously antiquated lines?"

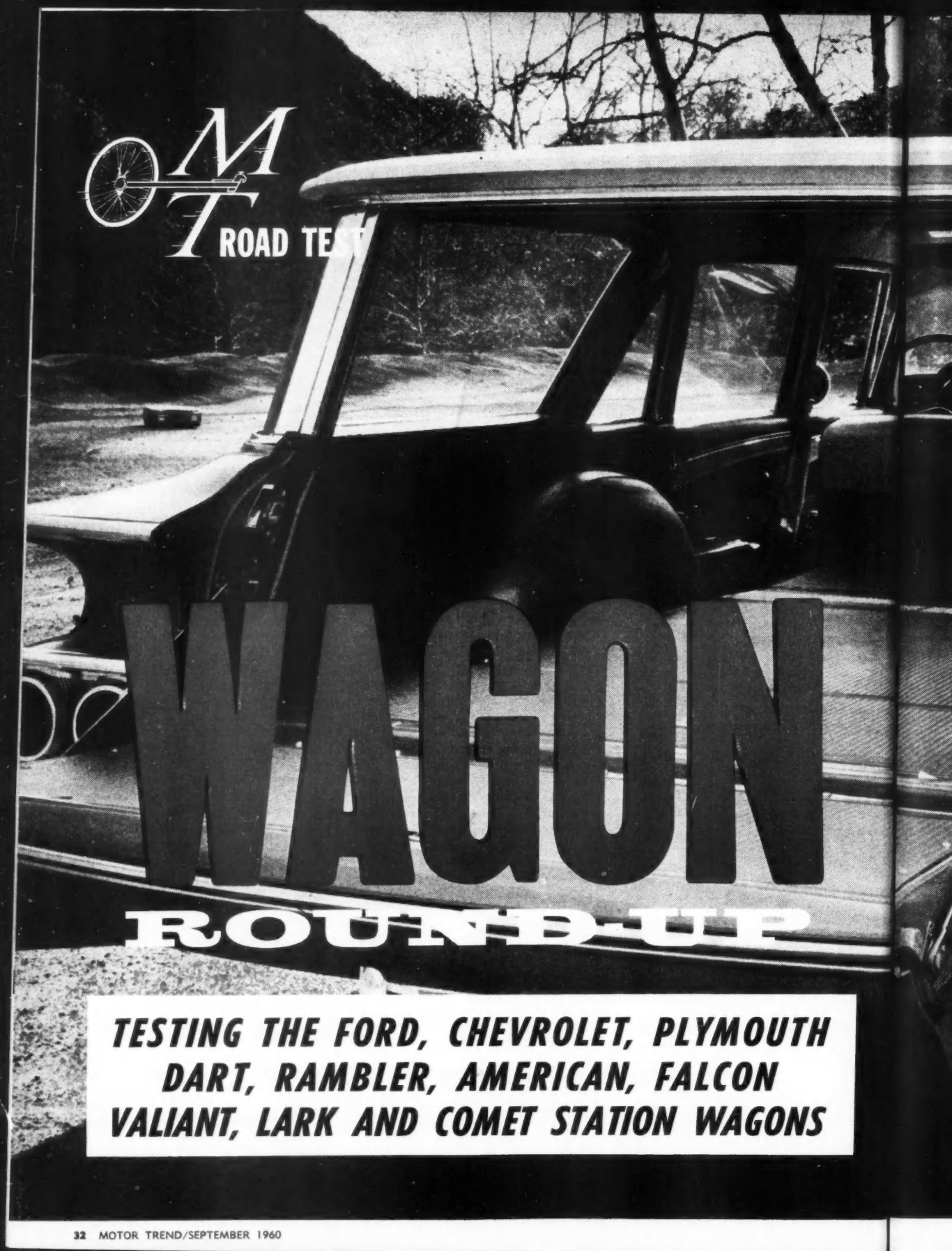
After more than a year of such evaluation, they arrived at what they considered to be the answer—the classics of this period *were classics* simply because they represented a certain intrinsic honesty—they reflected a basic desire on the part of their designers to present the practical, the functional and the inner beauty of an automobile as tastefully as possible.

Now came the task of interpreting such honesty and integrity of design and integrating it into the conformation of future Chrysler Division products. As mentioned, the first step on this path can be considered their use of the free-standing headlights that are pictured on our cover. There they stand—headlights, functional, direct, a link with the past in their simplicity and at the same time, modern and refreshing—a blending of the "Golden Age of Motoring" with the future.

In time, more such links with the past will appear. The long hood, a more practical positioning of the glass area, bolder and more closely defined radiator openings and many other touches that one associates with the roaring road machines of the "Jazz Age" are under consideration now.

Interestingly enough, it appears that some *other* Detroit stylists have also been taking a long, hard look at the exteriors of what we consider to be classics. George Walker must have gotten some inspiration, no matter how slight, from the X-810 Cord series when he sat down and drew the beautiful, long, flowing hood line for next year's Thunderbird and the lights in the Ford archives probably burned many a night a few years back when Lincoln stylists were debating the return of the classic four-door convertible, a model that may bow in 1961 in the Continental line.

And so it looks now as if a return to sanity in styling has been given a great deal of thought. If such thinking marks the beginning of a new cycle where *cars* (and not grounded missiles with three-toned exteriors) are due to start appearing in showrooms across the country, the American motorist can look to the future with anticipation instead of apathy.


MT ROAD TEST
WAGON
ROUND-UP
TESTING THE FORD, CHEVROLET, PLYMOUTH
DART, RAMBLER, AMERICAN, FALCON
VALIANT, LARK AND COMET STATION WAGONS



THE BOOMING POPULARITY of the station wagon has been one of Detroit's biggest success stories in recent years. From everyday drivers to commercial fleet operators, automobile buyers of all kinds have been attracted by the body style's versatility and its capacity for carrying either bulky cargo or extra passengers.

For 1960, the choice in low-priced wagons is greater than ever. In addition to the familiar trio of Chevrolet, Ford and Plymouth, a newcomer has appeared among the full-sized wagons, Dodge's Dart. Rambler continues to flank either side of the compact field with its small Rambler and medium-sized Six and V-8. Finally, among the compacts themselves, Studebaker's successful Lark has been joined by the Comet from Mercury, Falcon from Ford and Valiant from Chrysler.

To analyze just what this broad, new selection means to the prospective wagon buyer, MOTOR TREND undertook one of the most ambitious projects in its history; all ten of the popular wagons were tested simultaneously. Such a procedure made immediate comparisons possible and brought the individual features of each car into sharp focus.

The medium-priced wagons were not included in the survey because their appeal is based more on luxury than utility. Besides, all of them but the Mercury share body shells with their less expensive corporate brothers so they have no advantage in hauling capacity.

As a result of the tests, one very important conclusion was reached: Anyone who chooses a particular make because of its price or appearance may be making a serious mistake. The available variety in size and shape is so great that each wagon serves specific purposes better than others. To make a decision without considering exact hauling needs could be costly in terms of both money and efficiency.

For example, a true nine-passenger capacity is found only in the four biggest wagons while light hauling at the lowest possible cost is a special forte of the compacts.

The reports on the following pages are intended to show the strengths and weaknesses of each low-priced wagon. All ten, American, Chevrolet, Comet, Dart, Falcon, Ford, Lark, Plymouth, Rambler and Valiant, are described in detail to establish their particular hauling abilities.

CHEVROLET

The Nomad is the Impala of the Chevrolet wagon line. It has a four-door, six-passenger body, equipped and trimmed for the luxury-minded buyer. Four other styles are available, ranging from the two-door, six-passenger Brookwood to the four-door, nine-passenger Kingswood.

Before discussing the specific test car, it is important to stress the variety of Chevrolet engineering options. There are three completely different engines in a total of nine horsepower ratings, four transmissions, a legion of axle ratios and even extra-cost variations in brakes and suspension. All this enables the buyer to order his Chevrolet with just the right equipment for his particular driving needs.

The Nomad selected for this report is a good case in point. As the most exclusive Chevrolet wagon, it was appropriately set up for smooth, quiet operation with better-than-average performance. But it suffered in fuel economy and roadability.

It was powered by the mildest version of Chevrolet's biggest engine, the 250-hp, 348-cubic-inch V-8. Driving through Turboglide, an exceptionally smooth torque converter automatic, it scored the fastest 0-to-60 mph time of any wagon tested, 11.5 seconds. And it had the poorest mileage, 12.5 mpg.

For the sake of a soft ride, normal Impala suspension was retained. The stiffer system available at extra cost would really be better for hauling purposes and would improve stability at high speeds as well. As tested, the higher and heavier wagon body was too much for the standard soft springs. There was an excessive amount of sway in turns and float during highway cruising.

The basic structure appears in four General Motors lines: Chevrolet, Pontiac, Buick and Oldsmobile. The Nomad variation successfully blends plushness with utility. For example, the passenger compartment is fully carpeted but the cargo floor has a composition finish.

In general, the interior details are very well planned. The rear seat is among the best to be found in any station wagon. Erected for passengers, it does not have the gap between back and bench characteristic of folding types; it is just like a sedan rear seat. Collapsing it is a simple matter of lowering the back against the bench, where it locks in position for a flat cargo area.

The upholstery is patterned after that of the Impala with a vinyl and fabric combination. Matching vinyl carries the particular color scheme to the walls of the cargo compartment.

Chevrolet styling, with sharply curved rear quarter glass and horizontal tail lights and fins, does not lend itself to a wide rear opening. In the tailgate's favor, however, are a roll-down window, power operated, and an open position level with the interior floor.

FORD

Ford put much of its emphasis for 1960 on an entirely fresh approach to styling. Unfortunately the extension from the sedan body style to the station wagon was not made easily. Several concessions to the styling have limited the wagon's utility purpose, especially in the rear.

The station wagon used in this test was a nine-passenger Country Squire. It is the plushiest of the Ford wagon line with its simulated wood trim and is available only as a four-door. The powerplant was the 352-cubic-inch V-8 with a four-barrel carburetor.

The mechanical differences between the sedan and the station wagon are hardly worth mentioning. The increase in the spring rate is slight and the brakes are only slightly larger. Since the wagon outweighs the sedan by more than 600 lbs. some differences in performance, economy and handling are to be expected.

During the acceleration tests the Country Squire proved to be approximately three full seconds slower than the sedan at the 60-mph mark. Yet, when the miles per gallon figures were tabulated, the difference was not enough to change significantly the overall economy range. In the handling department, however, there are some marked differences. Body lean and tire squeal are more pronounced when cornering. Understeering, while not a source of major complaint, is more evident than with the lighter sedan. At highway speeds the front end tends to float out and the feel of control gets less as the speed increases.

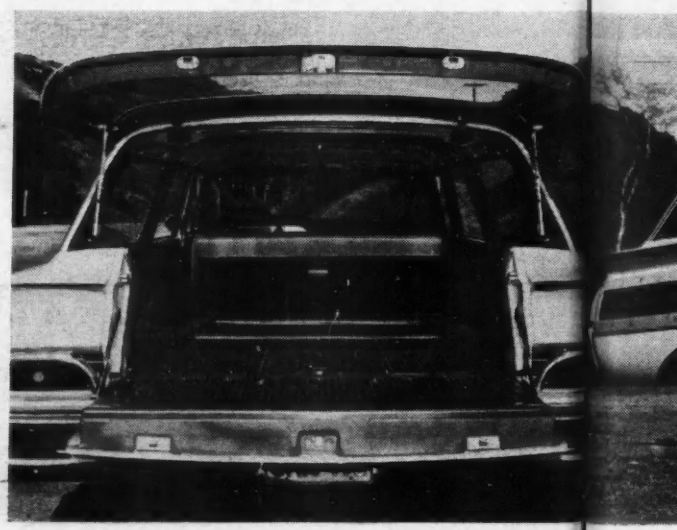
The Country Squire's second seat is split in the middle and divided into two equal sections. A large open space between the seats makes it extremely uncomfortable for a third passenger to be seated in the middle.

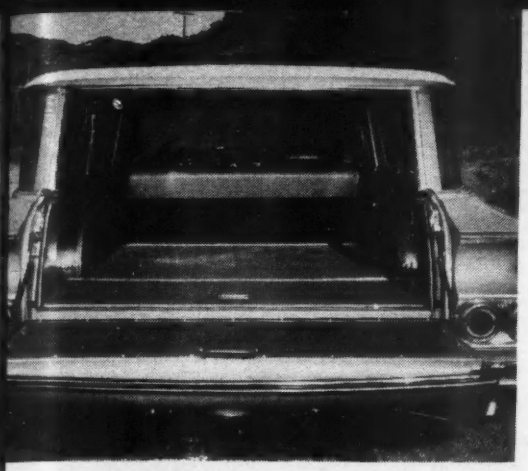
The third seat is front facing, a departure for most contemporary wagons. It isn't a full-width seat at all and is placed directly between the wheel wells. Actually it resembles a jump seat more than a seat in a standard-size car and appears to be an afterthought more than original planning. The upholstery consists of a padded pillow arrangement which slips over the sheet metal frame. Two children would have to squeeze to be seated and average-size adults would be cramped even for short trips.

Converting the rear area to maximum cargo capacity is a matter of folding both seats down. The floor in the Ford station wagon is firm, flat and has no wide gaps that small pieces of equipment can roll into and get lost. The flooring material is a hard surface that will handle the dirtiest of cargos and still be easy to clean. Although the seating arrangements are limited in the Country Squire when converted to maximum cargo capacity, it has one of the best floor areas among modern three-seat wagons.

The rear door is a good example of how the requirements of practicality were forced to bow to the dictates of styling. Although the 1960 Ford is nearly six inches wider this year the bottom tailgate is extremely narrow. The top-lifting tailgate is wide enough for any ordinary load, but lifting heavy items that high is not only inconvenient, it's too much work.

The Country Squire, Ford's prestige wagon, retains such traditional features as wood paneling, a rear liftgate and a forward-facing third seat. Its tailgate width is restricted somewhat by a horizontal treatment of the tail light.









Chevrolet Nomad (above) is a six-passenger wagon with a luxury finish. Its cargo opening incorporates a roll-down window and a tailgate that opens on a level with the interior floor. The spare tire is carried in a special compartment under the floor, just inside the tailgate.

CHEVROLET NOMAD

ENGINE: ohv V-8; 348 cubic inches; 250 hp
TRANSMISSION: Turboglide (torque converter auto.)
REAR AXLE RATIO: 3.08
CARGO LENGTH (back of front seat to end of lowered tailgate): 120.1 inches
CARGO WIDTH: 66 inches
CARGO HEIGHT (floor to headliner): 32.1 inches
REAR OPENING WIDTH: 46 inches
REAR OPENING HEIGHT: 26.7 inches
GAS MILEAGE: 12.5 mpg
ACCELERATION: 0-30 mph in 4.1 seconds, 0-45 in 7.2, 0-60 in 11.5

FORD COUNTRY SQUIRE

ENGINE: ohv V-8; 352 cubic inches; 300 hp
TRANSMISSION: three-speed automatic
REAR AXLE RATIO: 2.91
CARGO LENGTH (back of front seat to end of lowered tailgate): 124.4 inches
CARGO WIDTH: 63.1 inches
CARGO HEIGHT (floor to headliner): 32.9 inches
REAR OPENING WIDTH: 43 inches
REAR OPENING HEIGHT: 28.9 inches
GAS MILEAGE: 14 mpg
ACCELERATION: 0-30 in 4.6 seconds, 0-45 in 8.2, 0-60 in 14.1



VALIANT

In handling and highway speed characteristics, Valiant's station wagon is superior by a considerable margin over other compact station wagons. Unfortunately some finish workmanship and detail design of the three-seat wagon are not up to the mechanical engineering standards.

Powered by the slant Six, the wagon carries no engine changes to compensate for its added weight. During MOTOR TREND'S acceleration tests, however, this weight figure only slightly decreased its performance.

The extra pounds have been adequately compensated for in suspension by the addition of firmer rear springing. Handling, which has always been a major superiority of Chrysler products, is excellent. Corners are taken flat and crisp with little body lean and almost no noticeable loss of control. Regardless of the road condition little shock or vibration is transmitted to the passenger compartment.

In overall length the Valiant sedan is one of the bigger compacts, yet the station wagon one of the smallest in the compact class. This together with steering that is quick and positive made the wagon responsive in traffic and maneuverable in parking lots.

In terms of cargo capacity the comparative shorter length has been translated into one of the longest compact cargo compartments. In the important department of interior width however, it does not come up to compact wagon standards. The Valiant wagon inside is nearly seven inches narrower than the Lark, for example, which is only one inch wider in overall outside width. Loading, however, is simple in the Valiant, which has a down-swinging tailgate with an electrically controlled window.

Both front and second seats are similar in layout to the passenger compartment of the sedan, but in adapting the design to the station wagon a fairly large gap between the door and the seat edge results. Outside passengers will find it uncomfortable when three persons are riding in the second seat.

The Valiant's most serious limitation as a three-seat station wagon is in the design of the third seat, however. It is rear facing and the width will accommodate two persons. Legroom is seriously cramped and the headroom almost non-existent. Even a below-average-sized adult will constantly bump his head on the headlining and those who are tall will have to slump in the seat and turn sideways to ride at all.

Entry into the third seat is fairly easy and a rubber step on the bumper is helpful. It is necessary to twist the body awkwardly to get in and a grab rail would have improved matters quite a bit.

On the two-seat version of Valiant's station wagon the third seat area is used to store the spare tire. On the three-seat version used in this test, though, captive air tires were standard and no spare tire is included.



VALIANT WAGON

ENGINE: ohv Six, 170 cubic inches, 101 hp
TRANSMISSION: three-speed automatic
REAR AXLE RATIO: 3.55
CARGO LENGTH (back of front seat to end of lowered tailgate): 106.3 inches
CARGO WIDTH: 52.6 inches
CARGO HEIGHT (floor to headliner): 31.3 inches
REAR OPENING WIDTH: 41 inches
REAR OPENING HEIGHT: 27.4 inches
GAS MILEAGE: 20 mpg
ACCELERATION: 0-30 mph in 5.9 seconds, 0-45 in 10.8, 0-60 in 17.6

Chrysler's compact, the Valiant, is called a Suburban in wagon form. In basic design, it has several features in common with the Dart and Plymouth wagons, including a retractable tailgate window and a rear-facing third seat.



AMERICAN WAGON

ENGINE: L-head Six, 195.6 cubic inches, 90 hp
TRANSMISSION: three-speed manual
REAR AXLE RATIO: 3.31
CARGO LENGTH (back of front seat to end of lowered tailgate): 84.6 inches
CARGO WIDTH: 59.4 inches
CARGO HEIGHT (floor to headliner): 31.3 inches
REAR OPENING WIDTH: 39.3 inches
REAR OPENING HEIGHT: 26.4 inches
GAS MILEAGE: 24 mpg
ACCELERATION: 0-30 mph in 4.6 seconds, 0-45 in 9.7, 0-60 in 16.2

AMERICAN

The Rambler American has many unique qualities. It is the lowest-priced wagon made in this country, the smallest in both exterior size and interior capacity, the best performing in six-cylinder form, one of the two most economical to operate and, with a structure that dates back to the original Rambler of a decade ago, the oldest in basic design.

Three versions are catalogued but they all have the same two-door, five-passenger body. The differences are in trim and, in one case, the engine.

The Deluxe and Super are powered with a 196-cubic-inch L-head engine that is very lightly stressed to produce 90 hp. The Custom, a new series introduced late in the season, has the same basic block but with overhead valves, a higher compression ratio and a few other refinements increasing output to 125 hp. Actually, it is simply the unit that has been used for many years in the senior Rambler Six.

As the newest of the group, the Custom was the logical choice for this report. It proved to be a remarkable little car, scooting from 0-to-60 mph in 12.9 seconds. Even some of the big V-8's do not perform that briskly. Yet it delivered mileage rivalling that of the Falcon. It was an American Custom that scored the highest figure in this year's Mobilgas Economy Run.

Like all really small cars, the American is a cinch to maneuver. At highway speeds, though, it has a tendency to float too much for a proper feel of control.

It is as a cargo vehicle that the American has its most serious limitations. Expressed very simply, it is the smallest domestic wagon and, therefore, has the smallest payload. Its capacity of 52 cubic feet hardly compares with the 70 or more cubic feet of most other compacts. And it is barely more than half of the better than 90 cubic feet that a full-sized wagon can carry.

The cargo conversion is somewhat improvised. The rear seat back folds against the cushion and has to be strapped down to form a flat floor. This leaves a gap of several inches between the forward end of the floor and the back of the front seat. And the straps can come undone if the car suffers a sharp jolt on a rough road.

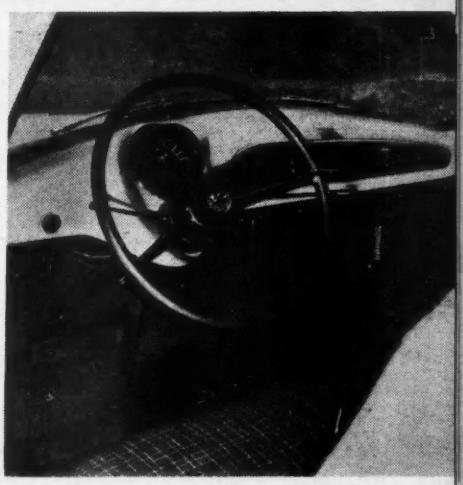
The side windows for the rear passenger compartment are of the sliding type rather than roll-down and the rear opening involves a conventional tail and lift gate.

Some of this sounds unfavorable but it is not meant to be. The cargo limitations are emphasized to show that the American is not engineered for the heavier chores sometimes expected of a wagon. However, as a nimble, peppy runabout, capable of light hauling at very low cost, the American is in a class by itself.



Though small size limits its cargo capacity, the Rambler American tops the list of US-made wagons in fuel economy and, among six-cylinder compacts, in performance as well.







Subtle touches for extra comfort are a highlight of the senior Rambler wagon. For easier passenger access when a third seat is fitted, the tailgate is replaced with a swinging door while folding seats are a very useful feature here.

RAMBLER REBEL CROSS-COUNTRY

ENGINE: ohv V-8; 250 cubic inches; 200 hp
TRANSMISSION: three-speed automatic
REAR AXLE RATIO: 3.15
CARGO LENGTH (back of front seat to end of lowered tailgate): 104.5 inches
CARGO WIDTH: 59.5 inches
CARGO HEIGHT (floor to headliner): 28.8 inches
REAR OPENING WIDTH: 47.8 inches
REAR OPENING HEIGHT: 24.5 inches
GAS MILEAGE: 14 to 17 mpg
ACCELERATION: 0-30 mph in 5 seconds, 0-45 in 7.9, 0-60 in 11.9





RAMBLER

WAGON ROUND-UP

Rambler's Rebel is one of the few American-made station wagons that actually handles better than its sedan counterpart. The four-door, three-seat version selected for this test was more stable in corners, more responsive in traffic and behaved better at highway speeds. Even understeer, which has been a complaint about the sedan, was not objectionable.

It is not unusual for a station wagon to handle better than a sedan. Most of these desirable characteristics are due to two things: a beefier suspension and more equal weight distribution brought about by the differences in body styles.

Although the Rebel is not a particularly hot car its 200-hp V-8 engine equalled the acceleration runs recorded by the sedan and in some instances shaved a tenth of a second off. The 11.8 seconds 0-60 mph run is one of the best recorded this year for comparable V-8 wagons. There was still plenty of power left at normal highway speeds for the extra acceleration needed to pass.

The three-seat Rebel has a side-opening rear door. This is something new for Detroit station wagons and the unique tailgate has several advantages. Entry to the third seat is easier and loading cargo is far simpler. A disadvantage, however, is that more parking space behind the wagon is necessary when the door is open.

A high, wide opening at the rear of the Dart wagon eases cargo handling, though the tailgate does not drop completely to the level of the interior floor.



Another feature of the rear door should appeal to people who travel with children. Merely locking the door from the inside permanently locks it. It is necessary to use the key to re-open the door. Small children are thus prevented from accidentally opening the door while the car is traveling.

There is ample room in the rear seat for two adults, although it is not generous. Since the third seat takes the space ordinarily set aside for the spare tire, captive air tires are standard equipment on the three-seat version and no spare tire is included.

The second seat and driver's seat are identical to the sedan layout. Reclining seats have a double value in the Rebel. They convert the front area into suitable sleeping quarters—and when hauling long items, such as a step ladder, the passenger side can be laid flat gaining about three feet of extra space.

Considering its shorter overall length, 20 inches less than other standard sized wagons, the Rambler shows good engineering in adapting interior space to outside dimensions. the creaks and rattles usually associated with the body type. And, at nearly 96 cubic feet, the Dart is one of the roomiest cars of its kind.

Cargo capacity is increased still further with an optional roof rack that mounts on supporting members of the unit structure to carry loads.

Interior arrangements are conventional. The second seat folds forward to create a long floor of serviceable composition material. A panel at the rear conceals the spare tire, together with space for a few small parcels.

Access through the tailgate is excellent. Dodge stylists have been satisfied with a vertical theme for the fins and lights, so there is plenty of room for a wide opening. It is also higher than average and, with a roll-down rear window, eliminates the obstruction of a protruding lift gate. Loading from the sides, however, is a bit more difficult because the door frames are arch-shaped like those of a sedan, instead of being square cut.

DART

The Dart and Plymouth are competitive versions of the same product. They share the same wagon body, not only with each other but also with the senior Dodge and Chrysler, and use similar mechanical components. The Dart is not available in as wide a range as the Plymouth but it does seem to have a slightly higher degree of assembly quality.

Tested as a six-passenger Pioneer V-8, the Dart wagon is also available as a six-passenger Seneca and nine-passenger Pioneer. Unlike Chevrolet and Ford and Plymouth, Dodge has the same series designations for both its wagons and sedans.

The V-8 engine, a 318-cubic-inch unit of 230 hp, is an extra-cost alternative to the 225-cubic-inch slant six of 145 hp. Coupled with Torqueflite, an efficient three-speed automatic, it delivers a reasonable blend of performance and economy. The test car accelerated from 0-to-60 mph in 13 seconds and consumed fuel at a rate of 14 mpg.

As expected of a Chrysler product, it handled very well. It seemed even steadier than the equivalent sedan, in fact, because of stiffer suspension and better weight distribution.

But the car's greatest assets are rugged construction and a spacious cargo compartment. The unit body-and-frame shows to particular advantage in a wagon in the way it eliminates

Restrained fins have eliminated the fender well for spare tire storage used by Dodge last year. A compartment under the floor now does the job.



Unitized construction, combining body and frame, makes the Dart Pioneer a particularly rugged wagon. Even the optional roof rack is anchored to the actual structure.



DART PIONEER

ENGINE: ohv V-8, 318 cubic inches, 230 hp
TRANSMISSION: three-speed automatic
REAR AXLE RATIO: 2.93
CARGO LENGTH (back of front seat to end of lowered tailgate): 121.3 inches
CARGO WIDTH: 62 inches
CARGO HEIGHT (floor to headliner): 31.8 inches
REAR OPENING WIDTH: 49.2 inches
REAR OPENING HEIGHT: 27.3 inches
GAS MILEAGE: 14 mpg
ACCELERATION: 0-30 mph in 4.6 seconds, 0-45 in 7.8, 0-60 in 13

COMET

What is the difference between a Comet wagon and a Falcon? Well, for one thing, about $80 in price for a four-door version!

In sedan form, they are reasonably distinct. The Comet is more than a foot longer and has a unique styling treatment. But as wagons, they are probably the most similar pair of cars on the market. The only major variation in exterior design is the Comet's front end, which identifies it at a distance and adds 2.8 inches to its overall length. (To view the same statistics from another angle, the Comet wagon is almost a foot shorter than its sedan counterpart.)

The difference then? Practically none on paper but quite a bit in refinement. For its price, the Comet is one of the highest quality cars being made in this country.

The wagon seats six and comes as either a two-door or a four-door. It has a 144-cubic-inch, six-cylinder engine that produces 90 hp. Tested with an automatic transmission, a torque converter with two speeds, it took 23.6 long seconds to reach 60 mph from a standing start. Fuel consumption was a respectable 20 mpg.

Because of its dimensions, it handles more like a Falcon than a Comet sedan. It is nimble, precise and extremely easy to drive. The ride is firm but not at all harsh.

The structure is a light, rigid unit combining body and frame. With its boxy shape, it is well suited to wagon needs. It has a capacity of more than 75 cubic feet, comparable to that of many full-sized wagons of just a few years ago.

The interior is thoroughly practical. The seats are comfortably cushioned with foam rubber and upholstered in a stylish but serviceable vinyl material. The rear seat is relatively light in weight for easier manipulating. Both the bench and back will fold horizontally, eliminating the few inches of wasted space that occurs when the bench folds vertically against the back of the front seat, and are finished on their reverse sides with flocking material.

The Comet is sold as a Mercury product and has the latter's roll-down rear window rather than Ford's lift gate. It is operated by a crank on the tail gate with a remote-control, power assist available as an option. The rear opening is good-sized and hindered only by cables that support the lowered tailgate. Storage of the spare tire shows some clever thought. It is set in the wall just behind the right rear wheel well, where it is easy to reach yet not in the way of cargo.

PLYMOUTH SPORT SUBURBAN

ENGINE: ohv V-8, 318 cubic inches, 230 hp
TRANSMISSION: three-speed automatic
REAR AXLE RATIO: 2.93
CARGO LENGTH (back of front seat to end of lowered tailgate): 121.3 inches
CARGO WIDTH: 62 inches
CARGO HEIGHT (floor to headliner): 31.8 inches
REAR OPENING WIDTH: 49.2 inches
REAR OPENING HEIGHT: 27.3 inches
GAS MILEAGE: 14.5 mpg
ACCELERATION: 0-30 mph in 5 seconds, 0-45 in 8.3, 0-60 in 13.8

PLYMOUTH

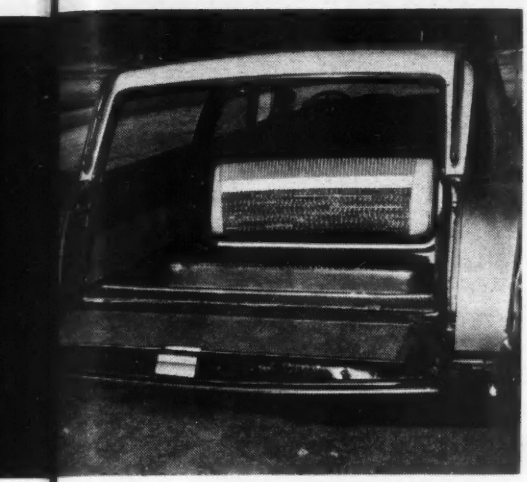
Plymouth's major assets in the past few years have been excellent handling and responsiveness. The station wagon has the added advantage of an easy-to-load spacious cargo compartment to make it one of the most popular American made wagons. The nine-passenger Sports Suburban selected for this test had all these features, plus a few minor changes in overall design which made it slightly superior to the 1959 version.

Powered by Plymouth's small V-8, the 230-hp version, the wagon was slightly slower during its acceleration runs than a similarly equipped sedan, but was still adequate for normal everyday driving. This is an in-between selection and for the economy minded a Six is available—for the power conscious, hotter V-8's. The Suburban handled exceptionally well on corners and has an excellent ride at highway speeds. Part of its desirable handling characteristics was due to the added front stabilizer bar which is included as standard equipment on the nine-passenger Suburban.

Plymouth's third seat is rear facing and legroom is somewhat cramped. This is to be expected since the space for the passengers' legs is shared with the spare tire. Not only does this reduce available space considerably, but it tends to con-



With the same structure as the Falcon wagon, Mercury's Comet has the same hauling ability plus a much higher quality finish in interior, exterior appointments.





tribute to a dusty, dirty situation for those who are wearing good clothes. Another disadvantage of this arrangement is the awkwardness it makes when trying to remove the spare tire. Of course, the conventional spare tire can be eliminated completely by changing to captive air tires.

Both rear and front seat fold down into the floor for maximum cargo capacity and the hard composition of the flooring material should be long lasting besides being easy to clean after a dirty hauling job. Unit construction did more than make the Suburban body construction tight and rattle-free. It added nearly two inches to the overall interior length. Unfortunately the lower roof line meant one inch less in interior height so little, if any, gain in total cubic carrying capacity was accomplished.

Entry into the rear seat is simplified by the addition of two rubber steps on the station wagon bumper. And getting in is also made much safer by two chrome-plated grab handles which curve over the rear roof panel. They are also excellent anchors for tie-downs when the wagon is equipped with a roof-type luggage carrier.

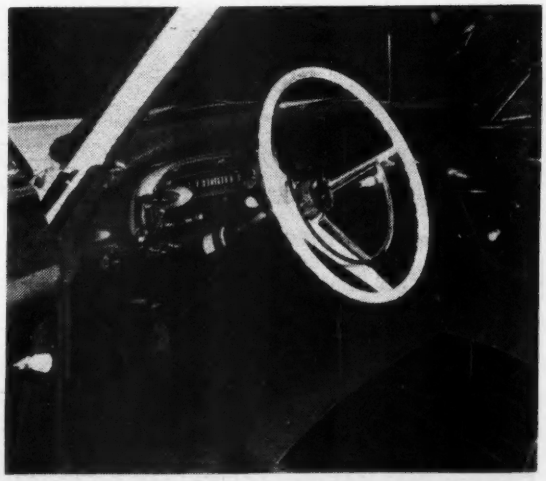
The Plymouth Suburban has long been a stand-out among low-priced wagons for its exceptional cargo capacity. For 1960, it blends its excellent features with a new unit structure for greater durability under hard use.

COMET WAGON

ENGINE: ohv Six, 144.3 cubic inches, 90 hp
TRANSMISSION: two-speed automatic
REAR AXLE RATIO: 3.31
CARGO LENGTH (back of front seat to end of lowered tailgate): 105.5 inches
CARGO WIDTH: 57.4 inches
CARGO HEIGHT (floor to headliner): 32.6 inches
REAR OPENING WIDTH: 45.5 inches
REAR OPENING HEIGHT: 27 inches
GAS MILEAGE: 20 mpg
ACCELERATION: 0-30 mph in 7.2 seconds, 0-45 in 12.9, 0-60 in 23.8

Because the Comet has 13-inch wheels, the spare tire is small enough to fit into a fender well. Elegance is the interior theme, highlighted with a stylish dash cluster.









LARK REGAL WAGON

ENGINE: ohv V-8, 259.2 cubic inches, 180 hp
TRANSMISSION: three-speed automatic
REAR AXLE RATIO: 3.07
CARGO LENGTH (back of front seat to end of lowered tailgate): 92 inches
CARGO WIDTH: 59 inches
CARGO HEIGHT (floor to headliner): 35.4 inches
REAR OPENING WIDTH: 45 inches
REAR OPENING HEIGHT: 30.1 inches
GAS MILEAGE: 16.5 mpg
ACCELERATION: 0-30 mph in 5.1 seconds, 0-45 in 8.1, 0-60 in 13

FALCON WAGON

ENGINE: ohv Six, 144.3 cubic inches, 90 hp
TRANSMISSION: three-speed manual
REAR AXLE RATIO: 3.56
CARGO LENGTH (back of front seat to end of lowered tailgate): 106.6 inches
CARGO WIDTH: 57.4 inches
CARGO HEIGHT: (floor to headliner): 32.6 inches
REAR OPENING WIDTH: 45.5 inches
REAR OPENING HEIGHT: 27 inches
GAS MILEAGE: 24 mpg
ACCELERATION: 0-30 mph in 5.4 seconds, 0-45 in 10.9, 0-60 in 17.9



The Studebaker (above) has greatest hauling capacity of the compact wagons, though it is the shortest with a four-door body. Special features include collapsible seats that form a bed and an optional rear seat for children.



STUDEBAKER

If the Studebaker Lark wagon has a familiar look about it, there is a good reason. Many of its components, both structural and mechanical, date back to the Champion and Commander of several years ago.

Yet it is certainly not an improvised car. Except for the Rambler American, the Lark has a shorter overall length than any other wagon made in this country. And it has more cargo space than any other compact! The Comet, Falcon and Valiant all have longer floors but, because they are from three to five inches lower than the Lark, their total volume is not as great.

Lark wagons are available with two- or four-door bodies, Deluxe or Regal trim and six- or eight-cylinder engines. All are officially listed for six passengers, though a small third seat, adequate for a couple of children, is an option. The particular car submitted to MT's scrutiny was the plushest of the bunch, a four-door Regal V-8.

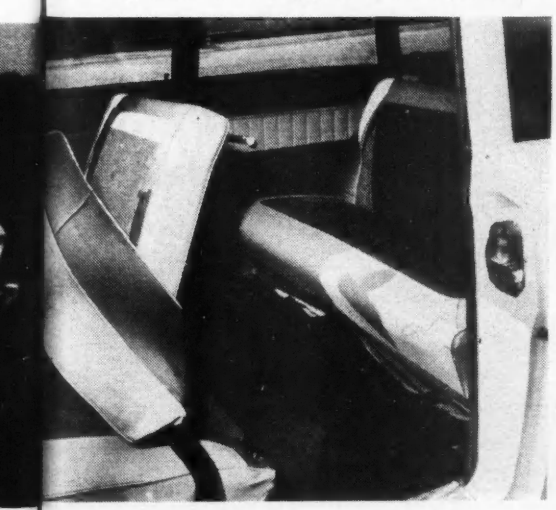
The test car had a standard Lark V-8 engine, displacing 259 cubic inches and producing 180 hp. (The factory offers a power kit at extra cost that adds another 15 hp.) It was teamed with Flightomatic, Studebaker's version of the Borg-Warner three-speed automatic.

Performance was average for a modest V-8, 0-to-60 mph runs taking 13.1 seconds, while fuel consumption was 16.5 mpg average.

Because the wagon has a 4.5-inch longer wheelbase and stiffer springs than the Lark sedan, it rides and handles noticeably better. It is less subject to fore-and-aft pitching and side sway.

The roomy interior is upholstered with vinyl in a pleated pattern that adds a touch of richness. One interesting distinction the Lark had over the other wagons tested was that *both* front and rear seats folded. The front seats had reclining backs that could be dropped all the way to a horizontal position while the rear seats were of the usual collapsible design to extend the cargo floor. Reclining front seats are also featured by Rambler, of course; they are not a Studebaker exclusive.

With its crisp, functional body lines, the compact Falcon has almost the same amount of hauling space as the full-sized Ford wagon of three seasons ago. A durable vinyl, with a pattern of ranch brands, is used to upholster the roomy passenger compartment.



A very important advantage the Lark has over all of its competitors, large or small, is its height. The interior has realistic proportions that allow plenty of room for bulky cargo. Fortunately, access to the compartment is also outstanding. The rear opening is higher than that of any other wagon and unusually wide in proportion to inside floor width. A conventional lift gate is used but it opens to sharp enough an angle to be out of the way.

The embryonic third seat is reached through the tailgate but is much too cramped for adult use. When it is raised, it opens a small compartment under the floor which can be used as a storage area.

FALCON

Ford's Falcon station wagon has very few gimmicks and follows a more conventional approach to station wagon design. Styling did not dictate many engineering features and the overall design shows excellent adaptation of outside dimensions to usable interior space.

Powered by the same 90-hp Six that is standard equipment in the sedan some differences in performance can be expected. But during the tests the Falcon wagon performed both in acceleration runs and overall driving feel much like the sedan. This isn't so unusual when the fact that the standard rear axle has been changed from 3.10 to 3.56 is considered. Still the Falcon is by no means a hot car and its performance is just adequate for normal driving.

Unlike the sedan, which handled beautifully at high speeds and on corners, the Falcon station wagon is not superior in these characteristics. This is most noticeable at high speeds where front end float and a definite feel of less control is apparent. Although it will corner fairly well for a wagon, it is not nearly as good as the sedan. There is little body sway, however, which is due to an increased rate of springing in the rear and modifications of the front shock absorbers.

The wagon is maneuverable at parking lot speeds due to having the same wheelbase although the overall length has been stretched out several inches. On the highway the steering feels loose and keeping a straight line is difficult.

Ford's engineers used a lot of ingenuity this year to make the Falcon's cargo compartment as useful as possible. Not only is the cubic capacity good but it is well laid out and practical to use.

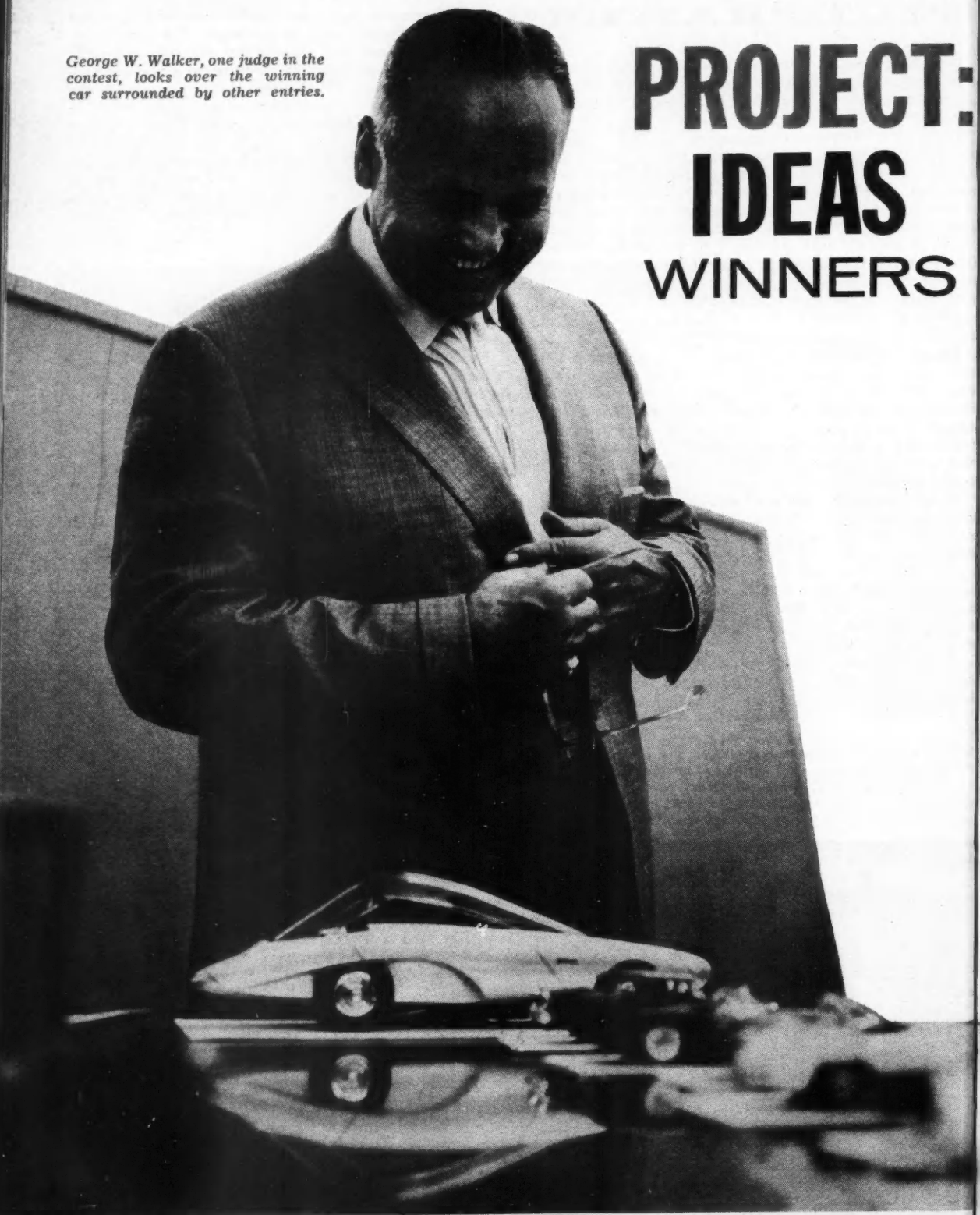
The cargo compartment also shows excellent forethought in design particulars. The floor area itself is metal and is ribbed for extra strength. The spare tire is stowed alongside the right hand wall. This position makes it easier to get out and does not interfere with most cargos since it is directly behind the wheel well which already encroaches on the floor area anyway.

Loading is also simpler on the Falcon wagon than on bigger Ford station wagons. The tailgate is lower and shorter, but most important there is no overhead transom-type gate on which to bump heads. The window is operated by a crank arrangement from outside and must be rolled down to open the door. An optional electrically powered window is available.

Converting the Falcon wagon to its maximum cargo carrying capacity is fairly simple. When the second seat is released from two latches, it folds forward and is supported by a brace that is attached to the outside of the seat cushion. Set up for maximum cargo capacity the Falcon has a floor over seven feet in length.

George Walker picks the **MOTOR TREND**

PROJECT: IDEAS WINNERS



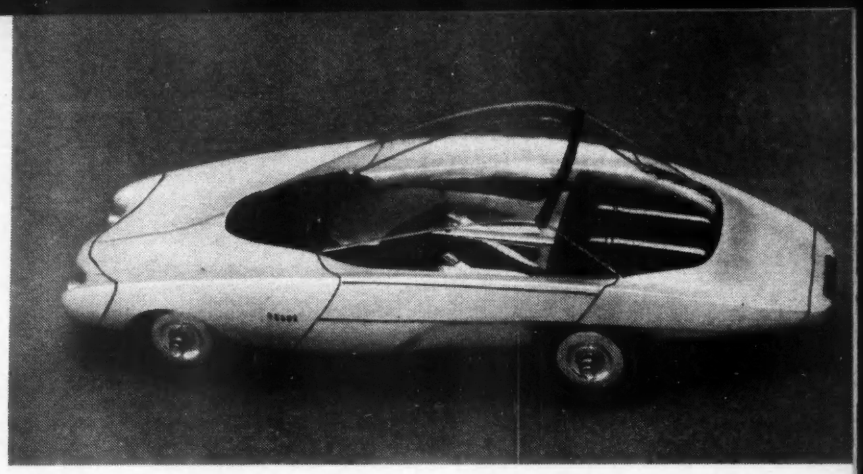
George W. Walker, one judge in the contest, looks over the winning car surrounded by other entries.

A **FUTURISTICALLY STYLED** electric automobile, complete with bubble canopy, took top honors in the Project Ideas contest sponsored jointly by MOTOR TREND and Revell, Inc. The winner of the senior designer class is Dave Pelly (16) of Los Angeles, who receives a 16 x 32-foot swimming pool valued at $3500. Joseph Ferraioli (17) of Brooklyn won the junior designer class honors and receives an all-expense-paid trip for two to Washington, D.C.; while Dan Vincent (16) of Phoenix, Ariz. won the apprentice designer class and receives brake linings for his car for the rest of his life.

Judging of the final entries was made by a panel composed of George W. Walker, vice-president and director of styling for the Ford Motor Company; Lewis H. Glaser, president of Revell, Inc.; and R. E. Petersen, publisher of MOTOR TREND.

The genial Ford executive said the large number of excellent entries made judging most difficult. "I cannot remember when I have seen so many good models and well-presented ideas," declared Walker. He said those who entered models had an advantage over those who just sent in plans or sketches, because "a model will show the idea in third dimension. Sometimes an idea will look really great on paper, but when mocked-up, flaws and errors appear. The real test is to build a model and see every angle." Walker was quite impressed with the large number of new and unconventional ideas the entrants submitted. "There are many ideas and unusual innovations that the automobile industry can certainly experiment with, and possibly use," he said. "I am most enthusiastic over the entries, for they show imagination, initiative and lots of good old American know-how. Our nation and the great automobile industry can be proud of these youngsters who will be our designers and engineers of tomorrow."

In submitting his entry, young Pelly said, "In designing this car, I have tried to create beauty through simplicity." He practiced this philosophy and, as a result, has a low, sleek, well-designed car, incorporating many new and modern innovations, including numerous safety advances. The dome area opens up by means of hydraulic lifts, hinged at the rear of the car. At the same time, the lower part of the body slides down, allowing easy entrance and exit for both driver and passengers. This innovation eliminates the ever-present danger of doors being opened into oncoming traffic, door hinges, doors springing open in case of accidents and allows easy entry to the luggage compartment located behind the seat.



This is the winning entry submitted by 16-year-old Dave Pelly of Los Angeles. This car of future features an electric motor, hydraulic canopy, rubber bumpers.

The car is powered by an electric motor and batteries are stored beneath the luggage compartment. The car is guided by a unicontrol located between the two seats, operated from either seat, and controls steering, acceleration and braking. To protect the occupants, safety belts are installed on both contour seats. The dashboard is padded for safety and to eliminate glare. It is located far from the passengers to avoid head injuries resulting from contact in case of an accident.

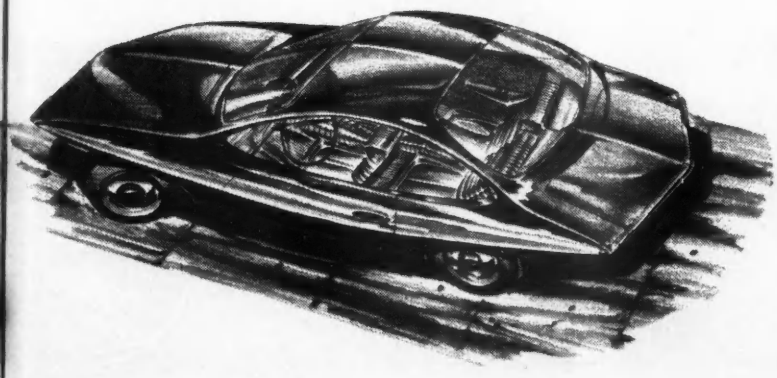
A new innovation is the windshield wipers which are in the form of a series of air jets located around the base of the dome. Bumpers, both front and rear, are rubber and are formed into the body. They are painted the same color as the car. The taillight includes brake light, license plate light, and turn indicator which blinks the shape of an arrow. Finned drive units located in the rear axle double as brakes.

Ferraioli's winning entry is a four-passenger compact car, and designed "to avoid the rectangular squared-off look of most U.S. cars, and stress gentle curves and sharp sculpturing on the side panels." Structural members of the unit body run through the roof pillars.

A basic Revell kit was modified by hand-formed balsa wood parts by the Vincent youth, who won third place. He made the supercharger out of a bolt and nuts; pedals are made of stiff wire; spark plug wires and fuel lines are thread; and rear "slicks" are two tires welded together.

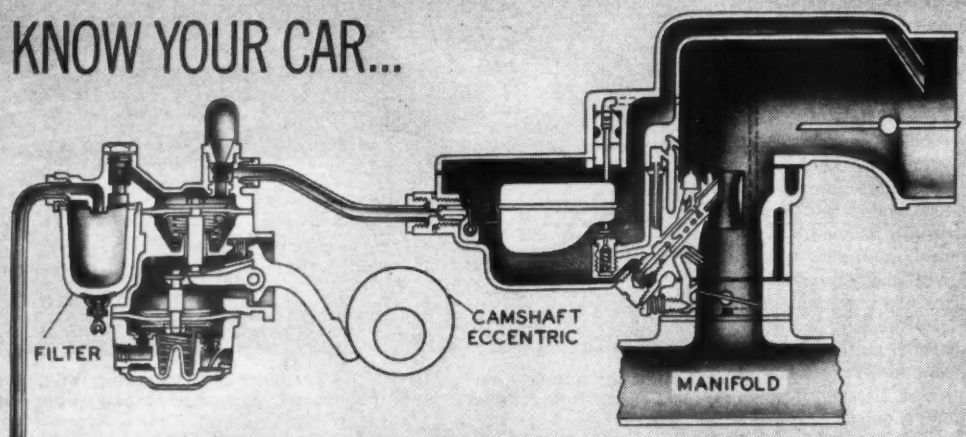
The contest was held to encourage youthful designers and automotive enthusiasts to submit models and plans of their ideas and creativeness and to develop increased interest in America's largest industry. It turned into one of the largest contests of its kind ever held. More than 61,000 entries were received, and 4100 of these from schools that had entered the contest as class projects.

Entries in Project Ideas (which means Individual Dreamers Encourage Advance Styling) displayed a multitude of original innovations, from a pick-up with a detachable cab and truck body to electrically heated and cooled seats. There appeared to be a noticeable reduction in the number and size of rear lights, but many modelists incorporated large turn-indicator arrows on the rear of automobiles. Many entries included back-to-back placing of seats, so designed that they can be moved backwards or forwards, and also turned, making it possible for passengers to sit facing either the front of the car, each other, or the rear.

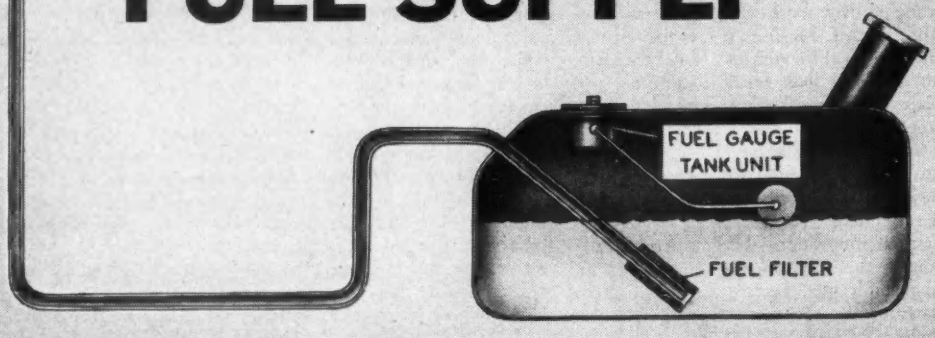


Four-passenger compact automobile took second place. Submitted by Joseph Ferraioli of Brooklyn, the design tries to avoid present squared-off look.

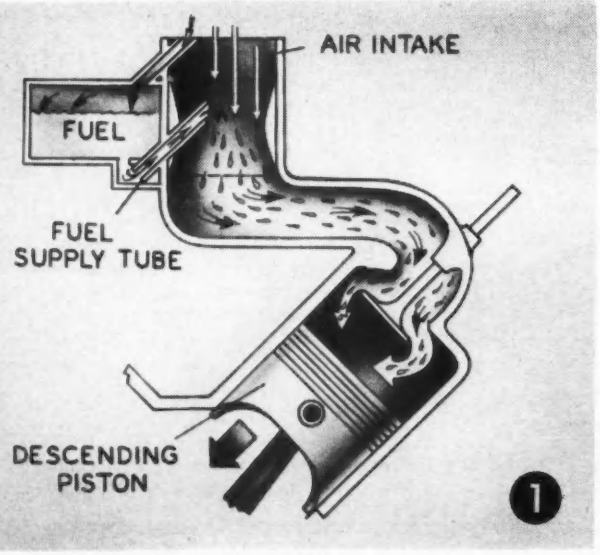
KNOW YOUR CAR...

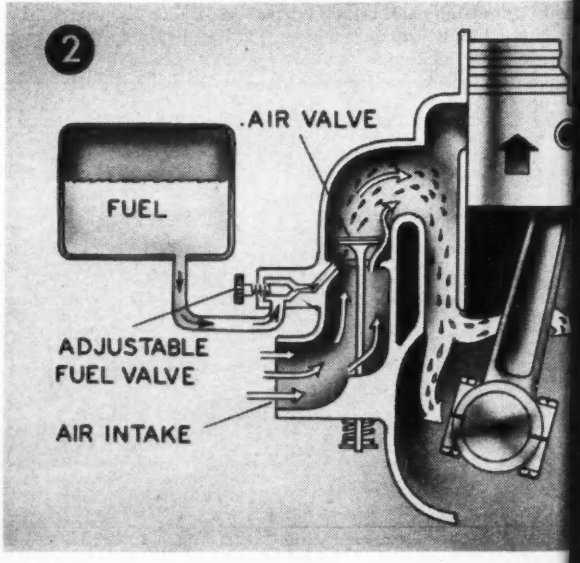


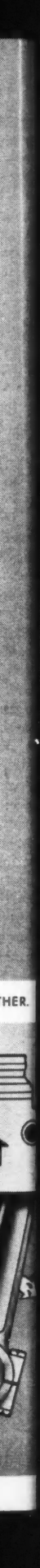
CARBURETION AND THE FUEL SUPPLY SYSTEM



THE DIAGRAM ABOVE SHOWS THE BASIC COMPONENTS OF THE AUTOMOBILE FUEL SYSTEM AND THEIR RELATIONSHIP TO EACH OTHER.









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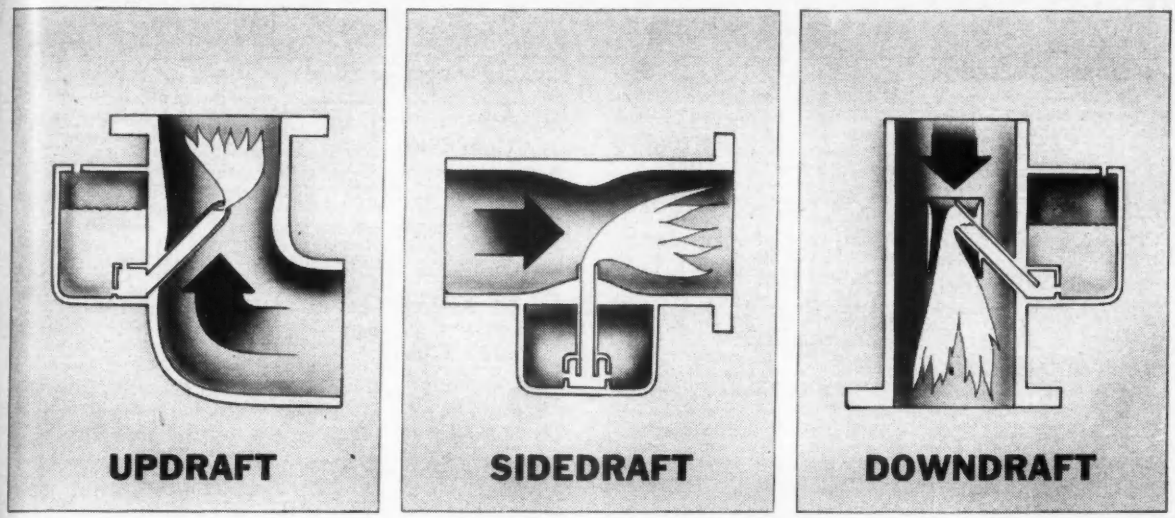
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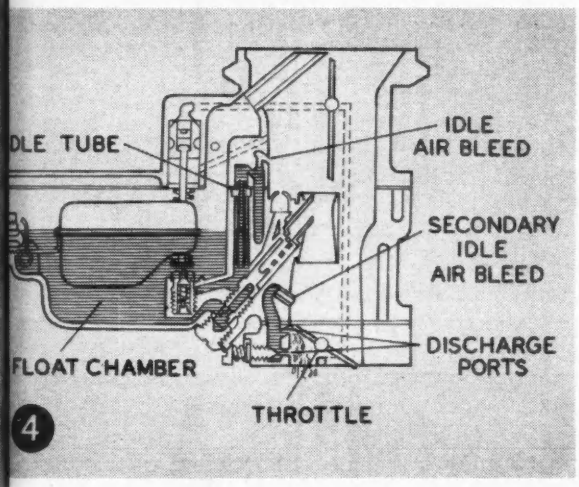
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Carburetors are commonly classified by the direction in which the air flows through them. By this criterion, there are three types used on automobiles, the updraft, the sidedraft and the downdraft. The drawings above illustrate the basic air/fuel flow for the three common types.



by Robert W. Temple

FOR THE LAST TWO MONTHS this series has been concerned with the internal workings of the automobile engine. In our first study we saw the action that takes place within the cylinder. Last month's report covered the arrangement of the cylinders, their lubrication and cooling. Now it is time to bring fuel to the engine, to see how it is measured, cleaned and controlled on its way to becoming explosive power. If you follow these step-by-step illustrations carefully the general picture of carburetion and fuel supply should become quite clear.

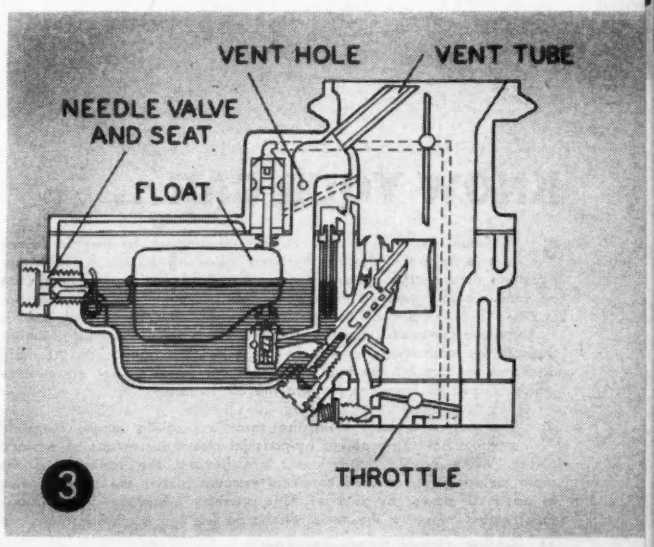
Next month these pages will tell the story of the ignition system—just how a spark reaches the fuel charge at the right moment.

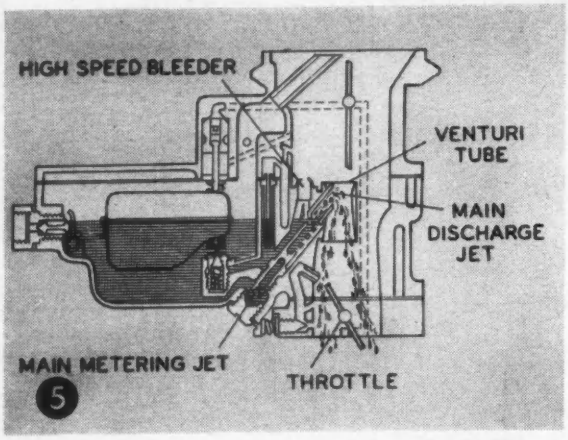
1 Carburetion is the process of mixing fuel with air in the proper proportions to form a combustible mixture. In this illustration we see how a carburetor operates by pressure differential. Atmospheric pressure pushes air through the carburetor to fill the partial vacuum created by the piston descending on the intake stroke. This air rushing past a gasoline supply tube sucks a fine spray to form the mixture.

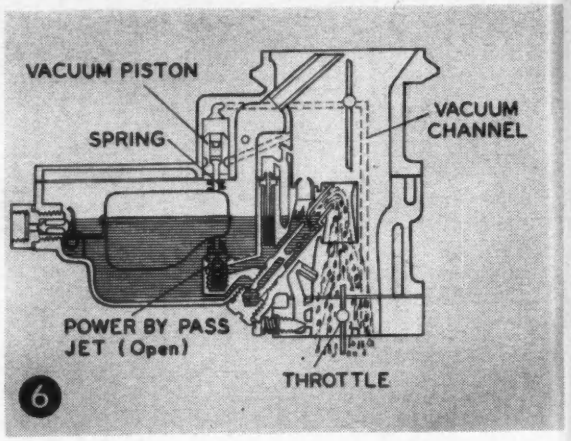
2 Early carburetors were just a mixing valve consisting of an air inlet tube, a gasoline supply tube and an air inlet valve operated by atmospheric pressure. This system is recognizable today as the reed-valve intake on some small two-stroke engines (go-karts, etc.).

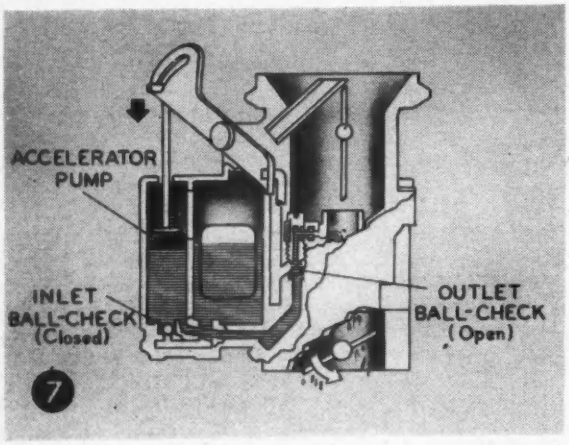
3 The float system. Fuel entering the float chamber is controlled by a needle valve, which in turn is operated by a lever on the float. This arrangement maintains the fuel level at a constant height in the float chamber by opening the valve as the float lowers and closing it as the chamber fills. The float chamber is vented by a tube.

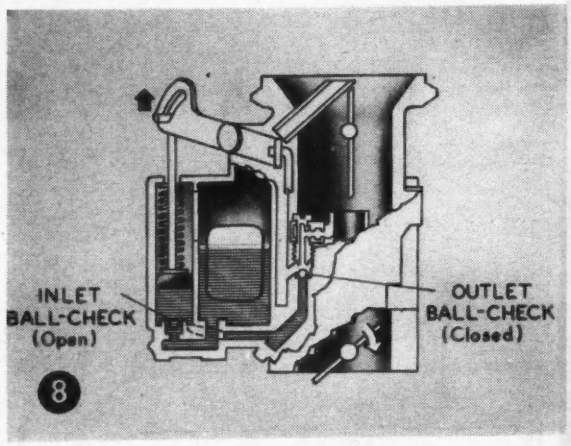
4 The idle system. When idling, the fuel flows from the float chamber through the idle tube. The fuel picks up air through the idle air bleed and then flows down to two discharge ports. Some additional air is sucked into the mixture through another air bleed just above the discharge ports. A small amount of fuel feeds through this, insuring fuel to the idle discharge ports immediately should there be an abrupt shut-off. Only the bottom port operates with throttle closed. At fast idle, the upper idle port is uncovered by the throttle valve.

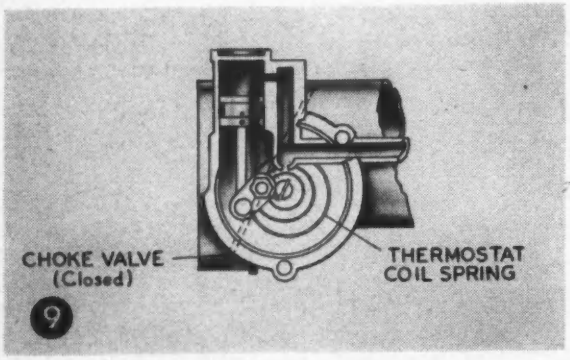


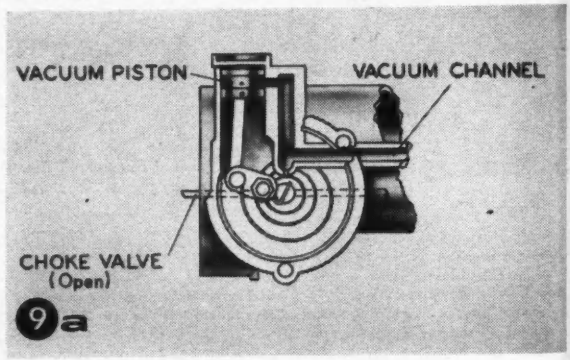












KNOW YOUR CAR...

5 The main metering system. Further opening of the throttle causes fuel to be pulled through the main metering system. As fuel flow increases through this system, it decreases through the idle ports until all fuel is being supplied through the main system. The venturi tubes increase the velocity of the air pushing through them and fuel is sucked from the main discharge jet. Fuel flows from the float chamber through the main metering and discharge jets. Air pulled into the main discharge jet through the high speed bleeder forms a fuel/air mixture which discharges from the jet into the air stream.

6 The power system. With the throttle partially open, manifold vacuum holds the power by-pass jet closed by means of a small piston. When power requirements are beyond the capacity of the main metering jet, reduced manifold vacuum allows the piston spring to open the power by-pass jet. This provides additional fuel through the by-pass tubes to the main discharge jet.

7 The accelerating system. Rapid acceleration requires an additional "charge" of fuel momentarily. This is supplied by an accelerator pump. Upon acceleration, the pump piston increases pressure upon the fuel in the pump cylinder, closing the inlet ball-check. The fuel "charge" is forced out past the outlet ball-check and through metering nozzles into the air stream.

8 As the throttle is released, the outlet ball-check closes to prevent entry of air into the system. The inlet ball-check opens to admit more fuel to the pump cylinder.

9 This is the hot air type of automatic choke. It is mounted at the side of carburetor air horn. The choke operating system consists of a thermostatic spring, which counterbalances a small vacuum-operated piston. The piston is connected to a crank arm on the end of the choke butterfly shaft. The thermostatic spring has more tension when cold. It is incased in a chamber to which filter air is fed after

passing through a "choke stove" (a shrouded tube which extends into the exhaust cross-over in the intake manifold. When the engine is cold the spring closes the choke butterfly in the carburetor intake horn. This restricts the air flow and causes a rich fuel percentage in the intake fuel mixture for starting.

As the engine fires, manifold vacuum pulls the piston which overcomes the thermostat tension sufficiently to open the choke butterfly slightly. This allows enough air to enter to provide a satisfactory operating mixture during engine warmup. The choke valve will be completely open by the time the engine reaches what is the normal operating temperature.

10 Carburetors may have one, two or four passages through them. These are commonly referred to as "barrels." The most popular carburetors today are downdraft in any one of these designs. A single-barrel carburetor is one complete unit as described on the preceding pages.

11 A two-barrel carburetor is two single-barrel units combined in a common housing. This system is used where a single throat is insufficient to feed all cylinders, as in the smaller V-8 engines.

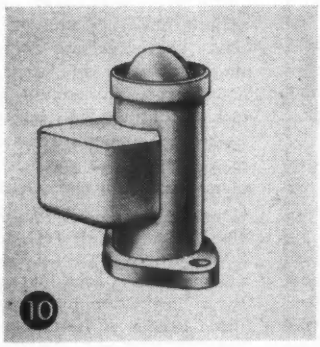
12 A four-barrel carburetor usually consists of two complete carburetor units plus two units which contain the high-speed circuits only. This is needed to maintain sufficient intake air velocity at all speeds. The two throats which have the complete sets of fuel circuits are adequate for normal driving requirements, and the other two barrels become operative only under more extreme demands.

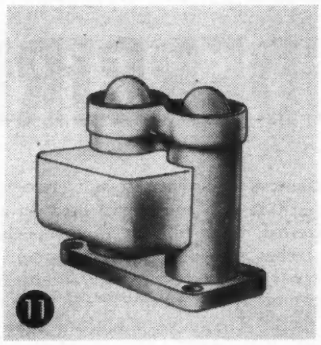
13 An air filter prevents dirt from entering the carburetor. Three types of air filters are used on automobiles. First of these is the oil-wetted filter. The air enters the intake ports (A) and passes through the cleaner element (B). This is usually a loose mass of copper wire which is cleaned occasionally and dipped in oil to provide a sticky surface to which dirt will adhere. The air then passes over the primary plate (C) and then down through the air tube (D) to the carburetor. There is a hiss pad (E) in the top of the filter and anti-resonance chambers (F) to control intake noise.

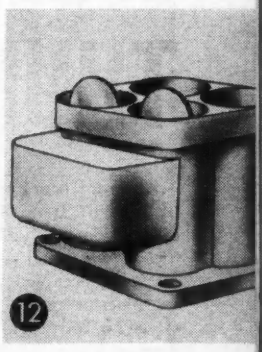
14 With an oil-bath filter dusty air enters at (A), is drawn downward at high velocity to just above the oil level (B), where it reverses direction throwing the heavier dirt particles into the oil. The finer dirt particles are stopped by the oil-wetted filter (C). Cleaned air passes through the air tube (D) to the carburetor. Silencing chambers are at (E) and (F) while a hiss pad is seen at (G).

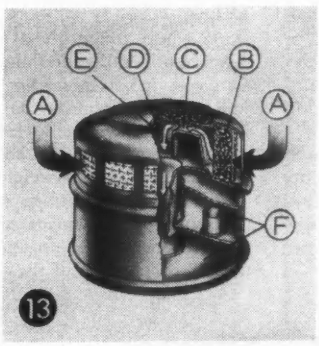
15 The dry-element filter is the most common today. It contains a fine screen pleated paper or fiber filtering element which can be replaced easily. The air flows through the element to the carburetor. The element both filters and takes care of the hissing noises. A silencing chamber prevents resonance.

16 & 17 Gasoline is supplied to the carburetor by a fuel pump which is operated by an eccentric on the camshaft. Figure 16 shows a combination fuel and vacuum pump. In Figure 17 we see how the pump, actuating lever operates the diaphragm in one direction only, sucking gas into the pump (A). As the pump lever rides off the high point of the camshaft eccentric, the diaphragm spring forces the fuel out of the pump to the carburetor (B). The tension of the diaphragm spring determines the fuel pressure.

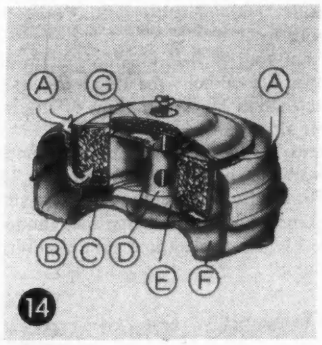

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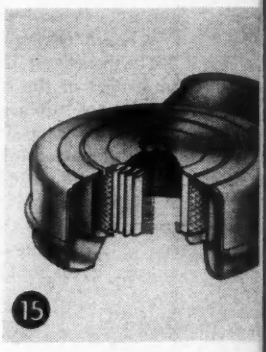

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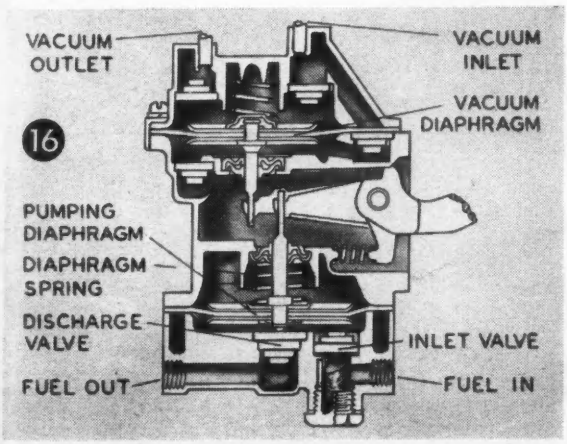


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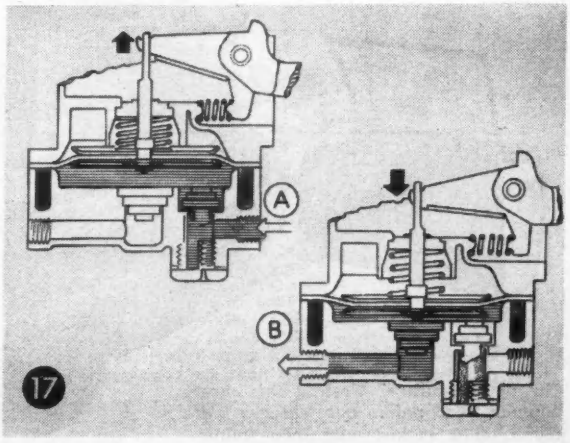


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ROAD TEST
THUNDERBIRD

THERE IS NO MORE extraordinary car in the world today than the Thunderbird. Although more than five years have elapsed since its first success, it has never been successfully duplicated or imitated. It is the only luxury-type car that has seriously challenged Cadillac's dominance in that class in terms of sale.

The Thunderbird tested for this report was the latest, and very probably the last, version of the current design. It was the sun-roof option which was first announced nearly a year ago, but has been rarely seen on the road. The current Thunderbird, of course, is to be replaced in 1961 by a new and different series, the third in the evolution of the vehicle.

Ford has always been fascinated by novel roof gadgets. In 1954 there was the transparent plastic panel; then in 1958 came the retractable hardtop. Now, in 1960, it is the sliding panel, which undoubtedly is the most practical trick of all. Unfortunately, according to reliable sources, the sliding roof panel will not be an option on the 1961 Thunderbird, but it is not improbable that it may reappear on the standard Fords.

The roof panel on the test car had an accessory price tag of $212 retail. It was formed of steel and moved between aluminum guide rails and created, when fully open, an opening 34 inches wide and 19 inches fore and aft. The panel, when retracted, occupied a cavity or slot between the headliner and the exterior metal. Opening it was relatively easy and, when closed, it formed a tight fit. The only malfunction noted was that on sharp deceleration, the panel had a tendency to slide forward to closed position. This, of course, could be corrected by a better locking device.

The benefit of the sun roof is that it affords many of the advantages of the convertible without the disadvantages. During the hot summer, it enables quicker cooling of the interior by allowing trapped hot air to escape.

The Thunderbird tested was fitted with another important option, the huge 430-cubic-inch V-8 that is rated at 350 hp at 4600 rpm and 490 lbs.-ft. of torque at 2800 rpm. This engine actually is the Lincoln V-8 adapted to the Thunderbird and it adds some sparkle to acceleration, while dulling gas mileage down to 12 mpg.

The 0-60 time, for instance, is just under 9 seconds, which puts the Thunderbird just over the line and into the hot class. This time undoubtedly could be improved and the car, in performance, would look better if it had a slightly lower axle ratio than the 3.10 with which it is presently equipped.

The 430-inch engine when in the Lincoln is fitted with a two-throat carburetor, but for the Thunderbird a four-throat has been mounted, which adds the measure of accelerating ability expected for such displacement.

The Thunderbird has never been the good handling car that drivers expect from a vehicle of such sporty appearance. The four-seater initially was equipped with softer coil springs in order to allow the optional installation of air suspension. Now that air suspension has been abandoned, the Thunderbird has been fitted again with stiffer semi-elliptic springs, and the handling has improved measurably.

Despite such improvements, however, the Thunderbird is far from the kind of handling car it should be. Steering is slow and not precise. The driver's position behind the broad hood limits visibility and makes control clumsy and restricted.

Such limitations are particularly regrettable because the Thunderbird is not a very large car by domestic big-car standards. It is, as a matter of fact, a kind of compact car in its class. The wheelbase is just 113 inches, actually an inch shorter than the compact Comet. Overall length is 205 inches, not compact but certainly well under the standard Ford's 214 inches. Width is 4½ inches less than the standard Ford.

If the Thunderbird has some of the dimensional attributes of a compact and yet lacks some of those same characteristics of maneuverability associated with the type, this is not its only deviation from the norm. It is, for instance, nearly as costly as any standard luxury car, yet it has quality comparable only to a standard low-priced Ford. The Thunderbird from its inception has always been more than adequately powered, and yet it has no reputation for performance in any form of car competition events, at least not without being highly modified. Its styling is distinctive but certainly not notable for sheer beauty of line.

All these things the Thunderbird has not. What it does have is originality, freshness and newness of concept. This is its secret. It has, more than any current domestic car, the spirit and quality that made the classic roadsters and tourers of the 1930's such memorable favorites.

Another unique fact about the four-seater Thunderbird is that it is a real heavyweight for its size. Curb weight is nearly 2¼ tons, about average for passenger cars that range from 10 to 15 inches longer overall. Since the engine and transmission are set well forward in the chassis, this puts approximately 55 per cent of the weight on the front wheels, certainly



Car of the future? Testing this most popular 'Bird points out features that many other makes may soon follow.

not an ideal balance for either steering or traction.

Nor is such location of power train components especially necessary in a car with an interior layout like the Thunderbird. There is no need to worry about center seating of passengers, since there simply is no provision for them. Driver and passengers sit alongside the transmission hump and driveline and never have the occasion to straddle them.

The passenger compartment arrangement has been a virtual exclusive with the Thunderbird, at least domestically, until 1960 when the idea was borrowed by Chrysler for its 300 series. Although the seats are individual and contoured, they are not the true bucket type. Yet they are comfortable and well backed. The center console houses power window controls, heater and other minor accessory items.

Despite sizable production, the car has never been anything other than a two-door, although Ford at times certainly must have been tempted to add a four-door version. The current doors are wider than standard for easier rear seat entry and exit, which is a commendable effort, but this same width is sometimes a handicap when parking between other vehicles that prevent the door being swung fully open.

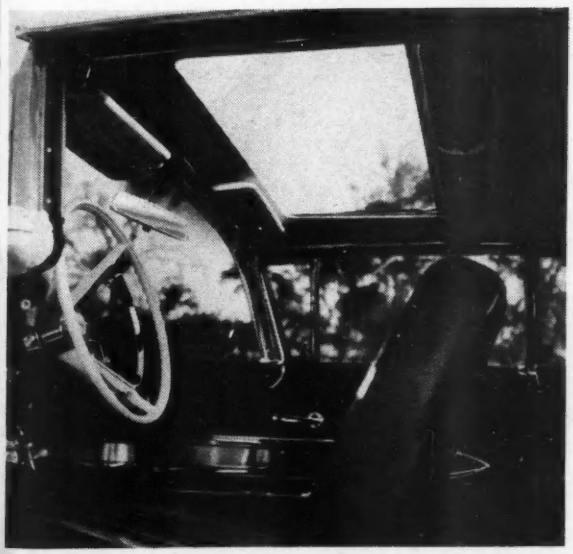
The Thunderbird, of course, has a unit construction body, and was one of the first of the Ford Motor Company cars to switch to the technique in recent years. And the benefits are quite apparent, with a degree of solidity and quietness higher than, say, standard Fords and Mercurys.

Trunk capacity, however, is one of the lowest of any sedan in its class. Long-range travel in a Thunderbird would have to be accomplished with less than the normal quota of luggage.

It is obvious that the appeal of the Thunderbird design is more than enough to offset any such shortcomings. The car's resale value is well above the standard of production sedans, a pace set by the two-seater and continued by the four.

There are many cars which will outperform the T-Bird, cost less, deliver more miles per gallon of gas, carry more passengers, even ride and handle better. But somehow the T-Bird has never been measured by these standards by the majority of the car buyers and drivers. It is a car apart and, like royalty, rarely required to account for ordinary deficiencies. Undoubtedly it is because these other qualities are, after all, rather commonplace. The Thunderbird is different and that is all it has ever had to be.

Sliding sun-roof in the hardtop gives the front passengers a new view. It's a practical option but has not been seen on many cars. Word is that it will be cancelled in '61.





Test Car

TEST CAR: Ford Thunderbird
BODY TYPE: Sedan
BASE PRICE: $4225

Maneuverability Factors

OVERALL LENGTH: 205.3 inches
OVERALL WIDTH: 77 inches
OVERALL HEIGHT: 53 inches
WHEELBASE: 113 inches
TREAD, FRONT/REAR: 60 and 57 inches
TEST WEIGHT: 4410 lbs.
WEIGHT DISTRIBUTION: 55 per cent on front wheels
STEERING: 4 turns lock-to-lock
TURNING CIRCLE: 40 feet
GROUND CLEARANCE: 6 inches

Interior Room

SEATING CAPACITY: Four
FRONT SEAT—
HEADROOM: 35.3 inches
LEGROOM: 43.3 inches

Engine and Drive Train

TYPE: Ohv V-8
DISPLACEMENT: 430 cubic inches
COMPRESSION RATIO: 10.1
CARBURETION: Single four-barrel
HORSEPOWER: 350 @ 4600 rpm
TORQUE: 490 lbs.-ft. @ 2800 rpm
TRANSMISSION: Cruiseomatic
REAR AXLE RATIO: 3.10

Performance

GAS MILEAGE: 12 mpg
ACCELERATION: 0-30 mph in 3.5 seconds, 0-45 mph in 6 seconds, 0-60 mph in 8.9 seconds
SPEEDOMETER ERROR: Indicated 30, 45 and 60 mph are actual 30, 44 and 58 mph, respectively
POWER-WEIGHT RATIO: 12.6 lbs. per horsepower
HORSEPOWER PER CUBIC INCH: .81

Artist's conception of the new Tempest engine utilizes Pontiac V-8 components wherever possible. Ram induction manifold, a possible option, is fitted with a four-barrel carburetor.



Speculation on 1961's most radical powerplant

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PONTIAC'S COMING BIG FOUR-CYLINDER ENGINE

IT HAS BEEN AN OPEN SECRET in Detroit for many, many months that Pontiac's compact car for 1961, to be called the Tempest, would have as standard an in-line four-cylinder engine. This engine, so reports went, would be just one-half of the current Pontiac V-8!

There has been no information to date from sources official or unofficial describing the details of the unique engine effort. But it is interesting to speculate on the design by studying the existing 389-cubic-inch Pontiac V-8 and its adaptability to such a conversion—and what the results might be.

If the big V-8 had just one bank of four cylinders sawed off, we know we'd have left a slanted four-cylinder engine, inclined at 45 degrees, of precisely 194.5 cubic inches. That would make a very hefty, potent four, and one that would be suited to some very interesting and effective power treatments.

The next step in conjecture would be that the four-cylinder could be manufactured on the same production line as the large V-8 from which it was derived. It could be assumed that the utilization of the same machinery would reduce considerably the cost of turning out the new engine.

Such a single production line, if it could be made to work, would be a great trick. In order to check out that point, however, it is necessary to analyze both the production advantages and the design restrictions. The logical starting point is to examine the parts of the V-8 that could be used interchangeably with the four with no effect upon the production line other than the increase in duplicated operations.

For instance, the four-cylinder could be built with the same pistons and connecting rods as the V-8 without requiring any change—although this would not necessarily result in an engine that resembled the V-8 in any way other than bore and stroke.

Valves, springs, rockers, push rods and lifters form another group of parts that would only involve increased duplication of manufacturing to channel to a four-cylinder engine of the same, or totally different, design. The timing gears, timing chain and oil pump might even be adapted without difficulty. Except for incidental items closely related to the foregoing parts, nothing else other than nuts and bolts could be assumed to be the same unless a closer relationship is first established between the four and the V-8.

A V-8 engine, however, is really only a pair of fours joined at the crankcase, and so it is not unreasonable to assume that one cylinder head from the V-8 engine could be used to cap the four-cylinder block. And so, if the same heads used on the big V-8 can be bolted to the four, again there is the possibility of merely increasing production of an already available component—and at considerably less cost than tooling up for something entirely new or different.

But the cylinder head would have to be exactly the same. Automatic equipment used for casting, machining and drilling cylinder heads is extremely complex and costly. Unless the cylinder head used for the four was almost identical to that of the eight, a completely new set of foundry equipment and production machining equipment would be necessary for production. Pontiac could save millions of dollars if the purchase and separate operation of different machinery could be avoided by using the V-8 heads.

But it might not be so easy. Even though the utilization of the V-8 head on a four-cylinder sounds like a simple adaptation at first glance, a further analysis reveals some new problems that must be solved. A cylinder head examined by itself normally doesn't cause much concern over inter-relationships other than piston design. The head usually is drawn to conform to the dimensions of a certain size bore in the block. If the bore is large, the head has to be longer than if it is small. Although it is a key variable, however, bore is just one of the factors that determine head length. A certain amount of space is taken up by the cylinder wall thickness and coolant space between.

Now wall thickness is fairly well standardized in the modern engine, but the coolant space varies considerably—and not just for reasons of cooling. Although it is a curious fact, it nonetheless is true that crankshaft configuration governs the space between the cylinders to a great degree.

A V-8 engine with a five-main-bearing crankshaft naturally has a main bearing web at each end of the engine, plus three located at the three intervals or spaces between the cylinders. This same layout is used when a four-cylinder engine has five main bearings, such as the famous Meyer-Drake-Offenhauser engines. With a bearing located between each cylinder barrel, the cylinders always are equally spaced in either a four-cylinder engine or a V-8 that's designed for five main bearings.

Engines with simpler crankshafts, however, such as the old flathead Ford V-8's, and the majority of four-cylinder engines, require only three main bearing webs in the block. But these designs do not have equal spacing between cylinder bores—instead the cylinders are grouped in pairs. There is a wide space in the center of the cylinder row, between each pair of bores, with sufficient separation to allow the necessary room for the center main bearing web.

Now if we go back to the current Pontiac V-8 and view the crankshaft in relation to the block, it becomes readily apparent that there is a definite influence by the crankshaft on the cylinder head design. If a five-main-bearing crankshaft dictates equally spaced cylinders, then the combustion chambers and bolt pattern of the head will be symmetrical. From this we can deduce that if the Pontiac four-cylinder for the Tempest uses the V-8 head, then there will be a five-main-bearing crankshaft down in the lower end of the block.

The next step in the guessing game is this: if the new four does have five mains, they will easily conform to the same dimensions as the big V-8 and, therefore, enable further great savings in parts and machinery for Pontiac in the production of the new car. As a matter of fact, it even will be possible for Pontiac to machine the bearing bores on the same machines

PONTIAC'S BIG FOUR

that turn out the current V-8. Even use the same crank grinders for the journals. The crank throws, however, won't be quite so simple, since the four-cylinder engine needs a 180-degree crank, rather than one of 90 degrees.

Actually, due to the engine having only half as many connecting rods attaching to the crankshaft, con-rod bearing width could be increased. Such widening of the big-ends would not be an advantage in manufacturing, since it would eliminate the opportunity to install unaltered V-8 rods. But it would benefit engine operation by providing more support for the engine under high-output conditions.

If Pontiac elects con-rods with big ends, and loses the interchangeability feature, not all is lost. Much of the machinery devoted to V-8 rod manufacture could still be employed in making the wide rods for the four.

Pontiac engineers, however, have yet another option in this matter of crankshaft and connecting rods. Instead of absorbing all that extra space to make the rod big-ends twice as wide as those in the V-8, a portion of the area could be used to make the crank cheeks thicker. Such an alternative, if used, can easily make the crankshaft of the Tempest four the ruggedest of all now in use in a U.S. production car.

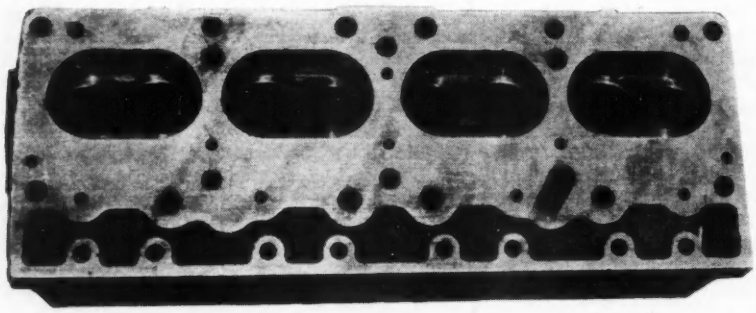
Not all engineers believe that more than three main bearings in a four-cylinder engine is a good idea. Some engineers contend that five main bearings produce too much friction in an engine of relatively low displacement. If this is the kind of thinking that rules at Pontiac, then the whole structure of our cylinder head-crankshaft speculation here crumbles. Then the V-8 cylinder head could not be used, since, as was pointed out, the two center cylinders would necessarily have to be set farther apart to accommodate the sturdier center main bearing web and an extra-wide bearing saddle (main bearing saddles in five-main-bearing engines are always much narrower than those of the three-main layout type).

Another specialized step, resulting from the use of a different cylinder head, would be separate block drilling and boring to relocate the cylinders. And higher manufacturing costs would result. In connection with this operation, the angle of the cylinders in the four enters the picture. It has been guessed previously that the angle in the four would be 45 degrees, the same as one bank of the V-8. If this is retained, and it probably will be, then the machinery that drills the bolt holes and bores the cylinders could be the same equipment turning out the V-8, with only a minimum of trouble.

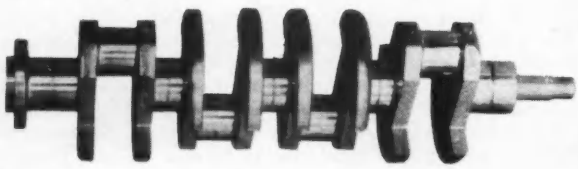
The slanting of the engine at a 45-degree angle is now familiar, since the introduction of the six-cylinder engine from Chrysler Corporation on 1960 Valiants, Plymouths and Darts. So we may expect to see some of the same tricks developed domestically by Chrysler. Instead of placing the water pump directly in front of the block, it can be located at the side and thereby reduce the overall length of the installation. Such a layout would then make the new four a few inches shorter than the current V-8.

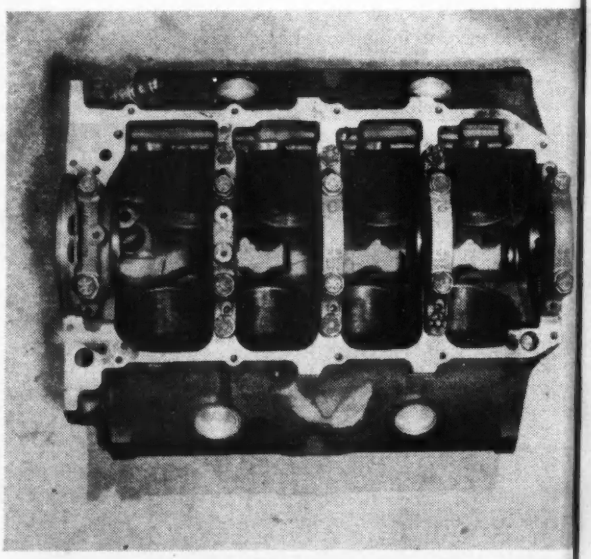
Ram induction is one more feature that could be incorporated with the slanted engine, although there is not information available indicating that this will be done. In fact, the 45-degree angle would provide even more ram tube space than there is with the 30-degree angle of the Chrysler Corporation engine. There would be, however, one factor that would perhaps discourage the use of ram induction.

Although the four-cylinder for the Tempest would be a natural for ram induction, at least as an optional power item, the carburetor heat could be a big problem because of the V-8 head design. The heat riser of a V-8 depends upon bank-



Standard Pontiac V-8 cylinder head demonstrates equal spacing of combustion chambers resulting from use of five-main-bearing-crankshaft. Crankshaft of Meyer-Drake-Offy (below) resembles 180 degree five-main type that may appear in Tempest. Production crank will not be as fancy as this racing car part.





Pontiac V-8 block shows five main bearing webs and saddles. Locations are dependent on spacing of cylinder bores. A Four with so much crank support would be very rugged.

to-bank flow of exhaust gases through a heat chamber in the intake manifold, since the four-cylinder engine has only one bank, there can be no such bank-to-bank flow.

Chrysler Corporation engineers had no such problem with their slanted six, since it has the exhaust ports on the same side of the head as the intakes so heat riser exhaust gases are easily obtained and returned to the exhaust system. In contrast to this design, the Pontiac V-8 engine head has the exhaust ports on the opposite side from the intakes. Using this cylinder head's exhaust heat riser passage would necessitate returning heat riser exhaust gases to the exhaust system with an extra pipe. This pipe would have to extend from a flange under the carburetor to the exhaust pipe on the other side of the engine.

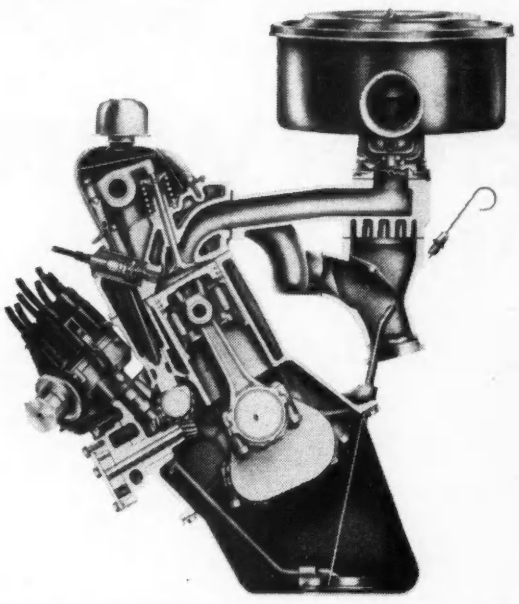
If Pontiac did want to eliminate extra exhaust piping, it could resort to water heating of the carburetor heat riser. A three-stage cooling system, that first recirculates the water through the head only, until a satisfactory temperature rise occurs, could provide rapid enough heating for an efficient heat riser. This type of heating system would require no external piping and could be cast integral with the intake manifold for standard short passage carburetion.

If a ram induction option is made available to the general public, flexible rubber hoses may be employed to deliver hot water to the heat riser cavity under the carburetor. Any attempts to operate ram induction on a passenger car without a satisfactory heat riser will meet with dismal failure. Low-speed operation requires a great deal of heat to prevent fuel condensation in the long delivery tubes from carburetor to ports.

In view of the potentials inherent in the new slant four, the Pontiac Tempest should have a great future in compact car racing. An engine as ruggedly constructed, as this four-cylinder apparently will be, could be hopped up to produce more than 225 hp at 6000 rpm, without making it so undependable as to be impractical.

The standard production version of the "slanted" four, tuned for economy, probably would be rated in the vicinity of 135 hp at 4600 rpm, using conservative carburetion and valve timing. If detonation can be prevented, the four is better able to withstand the increased pressures of high compression than the V-8 because of the increased bearing area and a more rugged crankshaft. And high compression with short valve timing, when possible, adds up to economical fuel consumption, so this engine may be able to go far on a single gallon of fuel.

And that ends the guesswork. How accurate is all this speculation? We'll know in early October.



The slanted Valiant, Plymouth and Dart engine which may have inspired the Tempest, mounts water pump, exhaust and intake ports on same side, not opposite like the Four.

The Four-Cylinder Engine and You

MOST AMERICAN CAR OWNERS' experience with four-cylinder engines has been limited. Since Ford's Model A, the major production car with four cylinders has been the Jeep, and its application has been mainly for the military. This year a whole new generation of motorists will be taking their first look at four-cylinder engines powering passenger cars and there are bound to be many questions.

There are traits and other considerations that are characteristic of all Fours. The biggest reason for making the Four at all is one of economy. But not in how little fuel it burns, because a well-engineered Six or V-8 frequently equals the Four's gas consumption record. However, the Four can be manufactured much cheaper and is usually far less expensive to keep up. There are fewer parts, only four cylinders, spark plugs, etc., to require maintenance and when replacement is necessary a healthy slice of the repair bill just isn't there at all.

In driving there are few generalizations that can be made about any engine until it is seen operating. But speaking very broadly, the Four has greater torsional vibration since its power strokes do not overlap. This also refutes the popular misconception that a Four will lug well. Actually the ability to transmit power smoothly to the rear wheels with a Four depends on a higher rpm. With any Four it will probably be necessary to shift down more frequently in traffic than with a bigger engine even though the latter may have similar horsepower ratings.

Performance enthusiasts will probably be taking a very serious attitude towards a Four. The engine will lend itself well to hopping-up for acceleration and for road racing when small displacement is a qualification. Because of its rugged lower end the powerplant will easily adapt to higher compression, blower pressure and other performance devices.

CORVAIR MONZA 900

IF THE EAGER questions and open stares of curious motorists are meaningful, there is still a lot of magic left in an automobile that is slightly different. Over the years this sort of reaction has been common while driving the more exotic types of machines from across the Atlantic but there has always been less interest displayed in domestic cars. An exception was the new Corvair Monza equipped with four-speed transmission and 95-hp engine.

It may have been the flame-red paint and upholstery that excited everyone who came within 10 feet of the car, but from the comments it was evident that this was a car a lot of people would like to own.

It's not difficult to understand why. This is a car equipped for fun with a better-than-average amount of practicality thrown in. Matching these two qualities is a difficult task and any company that can do it deserves praise. It is tempting to call the Monza a sportscar and while it is not in the strict sense, it falls loosely into that category for most.

Before getting too deeply into the car a word of warning: Don't blame the Chevrolet dealer because he doesn't have a Monza equipped as was this test car. Instead, be patient because the coupe reported on here was a '61 model and will be out very shortly, possibly with a few further improvements.

The flat-six is having its power boosted in easy stages by Chevrolet engineers. From the original 80 bhp at 4400 rpm, the Monza option delivers 95 air-cooled horses at 4800 revs. From a pure horsepower per cubic inch viewpoint (.68) this is mild output indeed and offers room for all sorts of future development. But this test is not concerned with anything beyond the 95 hp that is here now which moves the car up to 100 mph without difficulty. This is an increase at the top end of slightly more than 10 mph and is indicative of what happens throughout the range of acceleration. For example, several runs were made at the drag strip in Long Beach and the results were enlightening: A speed through the traps of 74.19 mph and an elapsed time of 18.40 seconds for the standing quarter-mile. It is probable that this would have been improved upon if shifting had not been slowly out of deference to a hand-built shift linkage (this was not a production model). Compare this quarter-mile speed to the 80-hp model's 61.3 mph and 22.2 seconds (MT, January '60), recorded with three-speed manual transmission and the potential of this new machine becomes quickly apparent.

Basically, how the power is obtained is from a new camshaft that lifts the valves slightly higher and holds them open a bit longer. This is coupled with a two-inch-diameter exhaust manifold and tailpipe that replaces the original 1½-inch unit. There is no change in compression ratio. The question that standard Corvair owners are already asking is whether this kit will be available and for how much? Reportedly it will cost about $212 for the necessary parts and will sell for $27 when ordered on a new car. Bear in mind that preliminary estimated prices are often subject to change.

Looming importantly in the Monza's fun factor is the all-synchro four-speed gearbox with its short, floor-mounted lever. Shifting gears is part of the game in a car of this type which makes a four-speed box mandatory. This one is fine; it slides readily through a conventional H-pattern and adds tre-

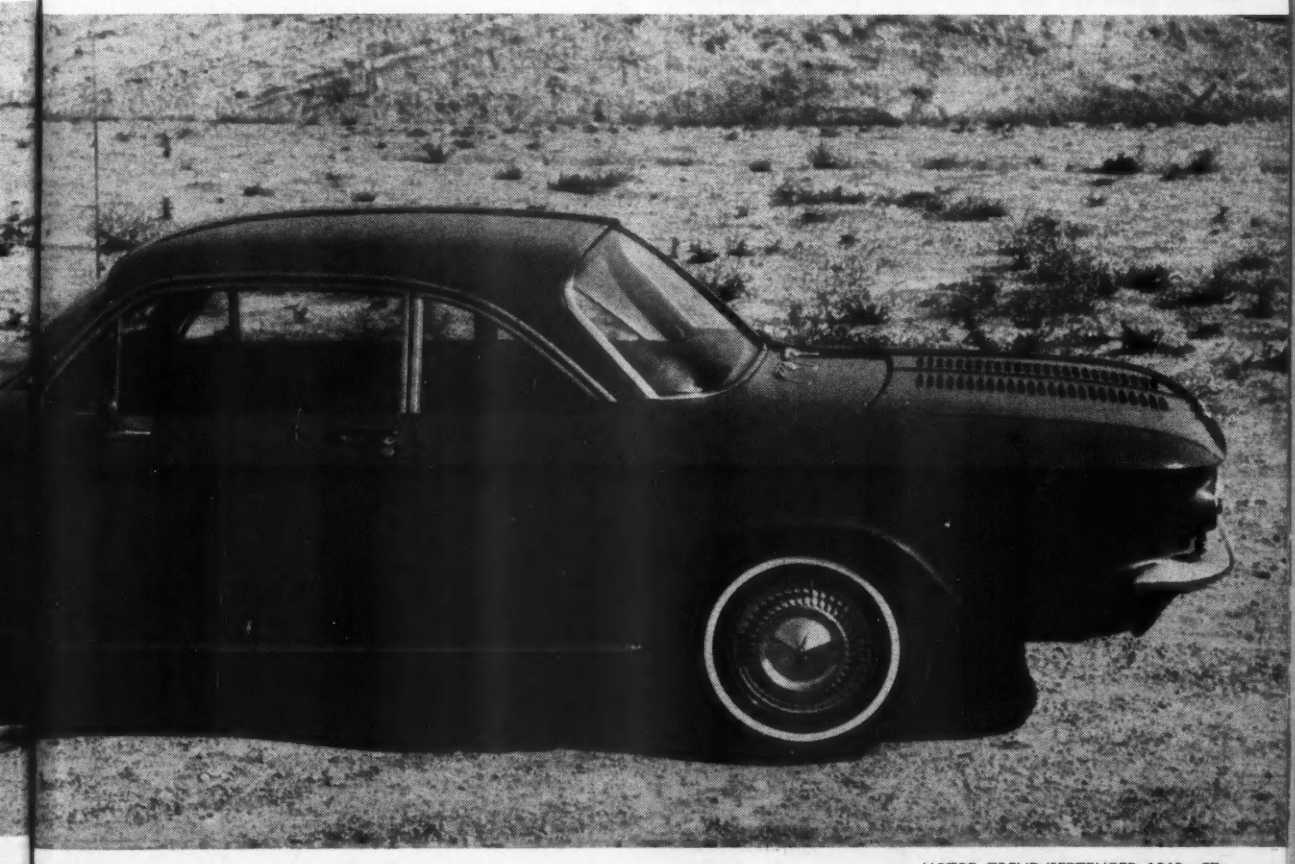


The extra performance of an optional 95-hp engine and a prototype four-speed gearbox were added to the elegance of the Monza 900 coupe to make MT's latest test Corvair one of the most interesting compacts yet. Bucket seats for the front passengers provide true sportscar comfort.

mendously to the machine's flexibility in traffic. The ratios could have been better chosen. It is just possible to start out in 2nd gear indicating that 1st and 2nd are very close together while 3rd is too high up the scale. A very unscientific but reliable seat-of-the-pants feel during acceleration bears this out. Second gear pushes the driver right back in the seat while 3rd seems to die in comparison. Actually 1st to 2nd is a 55 per

A preview test of Corvair's hot items for '61 a power-pack engine with four-speed box, all wrapped up in a deluxe package



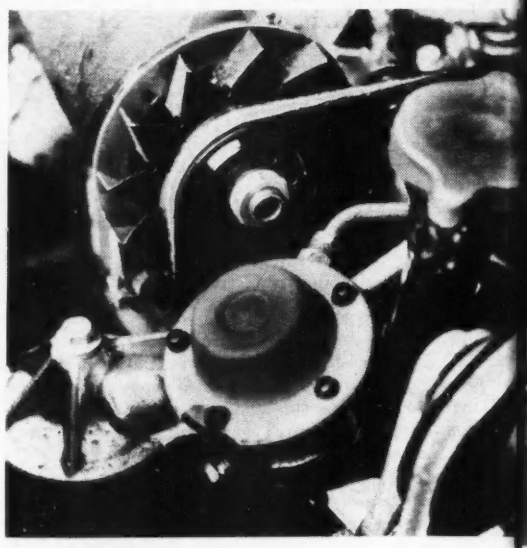


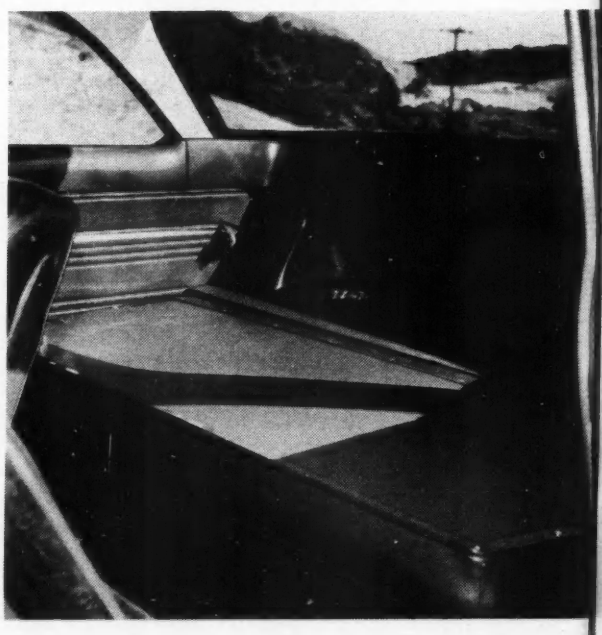
cent jump; 2nd to 3rd, 63 per cent; and from 3rd to the direct 4th is 44 per cent. Ratios chosen purely for even acceleration would be more nearly equal.

Speeds recorded in gears indicate that such a willing machine needs a tachometer as standard equipment. In 1st, 2nd and 3rd the car reached 30, 45 and 74 mph, but at the expense of some over-revving. And if the testers did it, customers most surely will. The answer, of course, is a tach with a firm red line and specific cautions as to what may happen if the limit is exceeded. Nearly every pure sportscar does it and there is no record of customers shying away from this use of negative psychology.

There is a great deal to be said about the Monza's cornering ability but most of it is summed up in one word—oversteer. With the unmodified swing axle rear suspension it handles quite normally until a fast, hard cornering condition is reached. Then look out! The rear end feels as though it wants to continue on around and lead the parade. It takes quick reactions and a deft wheel correction to keep on course and the slow (five turns lock-to-lock) steering is not an aid. The same problem has existed with other rear-engined cars and has been solved. Corvair should be able to do the same. Loading on the rear wheels of 1520 of the car's 2460 pounds doesn't help, but short of mounting the engine in the back seat ahead of the rear axle there seems little that can be done. Because there is so little weight on the front end, steering is extremely light and probably should be made quicker. It is believed that there may be some suspension modifications available for this model that could make it an excellent handler.

But there is more to handling than high-speed cornering. The fact is that most owners will never get into a corner as fast as testing. That they should know what will happen in an emergency is enough. Moving through traffic is a pleasure; there is plenty of power on tap and it is possible to slip through spaces that are prohibitive for full-sized machinery. Parking is a breeze and feels almost like power steering. At high speeds on the open road the Monza tracks nicely, isn't adversely affected by crosswinds or road crown. One item to watch is tire pressure. Use what the factory recommends.







Improved fan belt pulleys are fitted to all recent Corvairs. As seen in the top photo, the idler has deeper flanges to hold the belt securely on course.

The fold-down rear seat, a popular Corvair feature compensating for the limited luggage space typical of rear-engined cars, is retained in the Monza 900.

The luxurious upholstery, shown at left, is one of the Monza's most appealing assets. It consists of pleated vinyl with a grained, leather-like finish.

The p breath longer

Improp slogging —deper

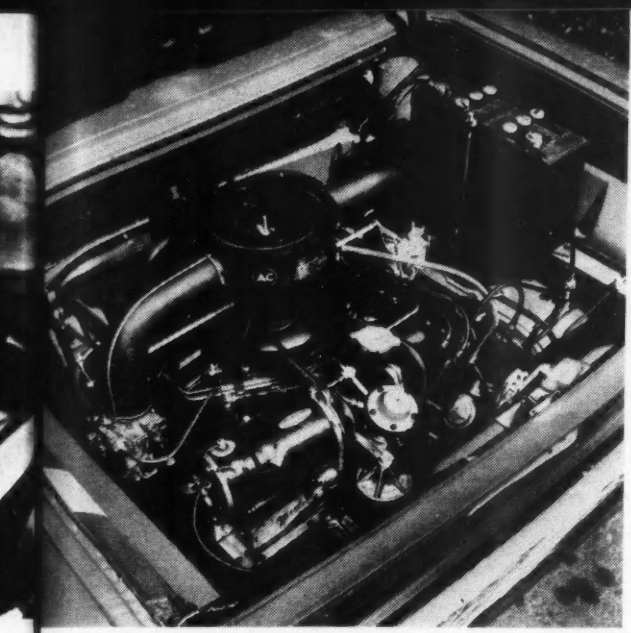
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Rear position It would find it sa up a flat 44 inches the headl partment' Touring

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The principal modifications in the 95-hp engine involve breathing ability; a special camshaft provides a higher, longer valve opening and the exhaust system is enlarged.

Improper pressures make the car handle either like it is slogging through deep sand or on a roadbed of ball bearings —depending upon which way pressures are off.

Brakes are neither especially bad nor good. They stop adequately and as in most domestic cars they'll fade under extremes such as a steep mountain grade or a road race.

Two things left a favorable first impression with virtually everyone who saw the car: exterior styling and interior seating. Even those who don't care for the appearance of the four-door Corvair (and there are some) thought the rakish coupe was handsome. The only external difference from the standard Corvair coupe is small fender crests that identify the car as the Monza 900. Inside, the big changes are the individual semi-bucket seats, upholstery and floor coverings. The seats are covered in a high-quality leather-grained plastic and are molded to give comfortable support over long distances. Also, they are high enough to allow entry and exit gracefully.

The brake and clutch pedals are offset slightly to the right of seat center but the driver is not particularly aware of it. Steering wheel position is in good relation to seats and allows quick instrument viewing. The floor is covered in pile carpet, colored to match the red seats and dash. Full-circle visibility has a bare minimum of glass distortion and that not enough to complain about. Front and rear pillars do not obstruct line of sight to any noticeable degree.

Rear seat legroom is necessarily scanty but the seating position is compensated by placing one in a knees-high attitude. It wouldn't do for an adult on a long trip but children would find it satisfactory. Folding down the rear seat backrest opens up a flat cargo area than can be mighty useful. It measures 44 inches long by 55 wide (widest point) while distance to the headliner is 29 inches. Add to this the front trunk compartment's 9.5 cubic feet and Monza becomes a true Grand Touring car with the emphasis on touring.

The Monza is a curious admixture. It appeals to motorists who couldn't care less about its sporting character and is certainly an excellent compromise choice for the family man-enthusiast who wants low-cost sports motoring for himself, wife and a couple of youngsters. In fact, it is a temptation to call it the Poor Man's Porsche.



Test Car

TEST CAR: Corvair Monza 900
BODY TYPE: Coupe
BASE PRICE: $2265 (with 95-hp engine)

Maneuverability Factors

OVERALL LENGTH: 180 inches
OVERALL WIDTH: 66.9 inches
OVERALL HEIGHT: 51.3 inches
WHEELBASE: 108 inches
TREAD, FRONT/REAR: 54 and 54 inches
TEST WEIGHT: 2460 lbs.
WEIGHT DISTRIBUTION: 38 per cent on front wheels
STEERING: 5 turns lock-to-lock
TURNING CIRCLE: 39 feet curb-to-curb
GROUND CLEARANCE: 6 inches

Interior Room

SEATING CAPACITY:
FRONT SEAT—
HEADROOM: 38.7 inches
WIDTH: 57.8 inches
LEGROOM: 42.8 inches
TRUNK CAPACITY: 9.5 cubic feet

Engine and Drive Train

TYPE: Ohv opposed Six
DISPLACEMENT: 140 cubic inches
BORE & STROKE: 3.375 x 2.60
COMPRESSION RATIO: 8.0-to-1
CARBURETION: Two single barrels
HORSEPOWER: 95 @ 4800 rpm
TORQUE: 125 lbs.-ft. @ 2800 rpm
TRANSMISSION: Four-speed all-synchro
REAR AXLE RATIO: 3.27

Performance

GAS MILEAGE: 20 miles per gallon
ACCELERATION: 0-30 mph in 3.5 seconds, 0-45 mph in 7.6 seconds and 0-60 mph in 13.4 seconds
SPEEDOMETER ERROR: Indicated 30, 45 and 60 mph are actual 31, 45 and 60 mph respectively
POWER-WEIGHT RATIO: 25.89 lbs. per horsepower
HORSEPOWER PER CUBIC INCH: .68

the big myth of car

By Dean Parker

One controversial opinion on the many-sided problem of car upkeep

IN REWORDING Shakespeare, "To Maintain or Not to Maintain," we must ask ourselves several important questions. Will the owner who takes care of his automobile be any further ahead after 10,000 miles, or 30,000, or 60,000 miles? Will he have lengthened the useful life of his car by taking care of it? Will the car have an appreciably higher market value? Will the careful maintenance be reflected in lower operating costs per mile? Is the well-maintained automobile appreciably more reliable than the neglected car?

More specifically, should automobiles be greased and have the oil and filter changed every 1000 miles? Will the slight increase in gasoline mileage justify the cost of a major tune-up? Is an expensive engine overhaul justified to save a few quarts of oil?

In other words, does it pay to baby your car? I do not believe that it does. My analysis, which I will set out, indicates that the average owner can afford to take a more informal view of his maintenance problem. I do not advocate outright neglect or abuse of any kind, but I think our modern cars are engineered to the point where they do not require the maintenance they did 20 or 30 years ago.

In these days, when an oil change can cost $2.50, a gallon of gasoline more than 40 cents, and when a good engine tune-up job can run you $25 or more, the foregoing questions are important to every car owner. After all, our basic problem is to get dependable, comfortable, safe, and respectable transportation at the minimum possible cost per mile. Where does maintenance fit into this picture?

Let us take two typical automobile owners: One is very careful to maintain his car exactly according to factory recommendations. He changes the oil right on schedule, lubes the chassis frequently, insists on regular major engine tune-ups; is the ideal car owner as far as the factory and the auto service industry are concerned. Our other owner is just the opposite; he does not abuse his car, but he *neglects* it. His maintenance attention is haphazard, he does not keep track of mileage intervals between service jobs. He just does not seem to care whether his car gets any attention or not.

Which owner is right? Let's have a look . . .

None of us gets any younger as time goes by—and it is very true of cars, too. To put it mildly, we all undergo a gradual deterioration in several respects. All of us have tasted the most bitter pill of deterioration—depreciation. The market value of your car drops steadily the minute you drive it off the showroom floor. And it continues to drop at almost the same rate whether you leave it in the garage or drive it. When you decide to sell or trade, I say you will be lucky if the condition of the car has any big effect on the market value. Then it is only what you can see from the outside that counts; careful maintenance of internal mechanical components probably will not bring you a dollar more in the market place. Actually, any detailed consideration of the depreciation factor is beyond the scope of this article, but I feel that it is fair to point out that mechanical maintenance generally has little effect on the true market value of a used car.

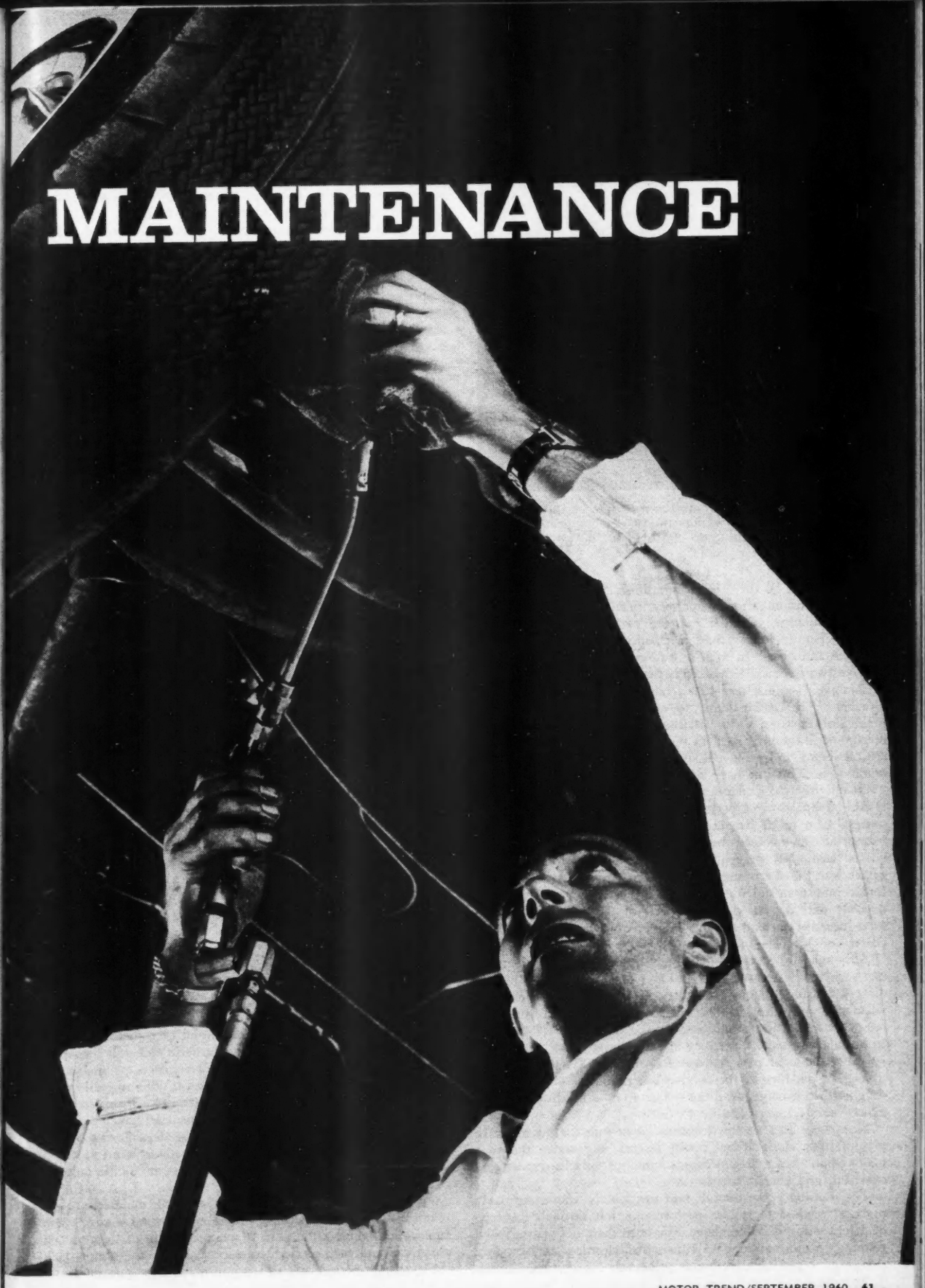
Mechanical deterioration can be loosely classified under wear and gradual loss of performance. Wear can be sub-classed under engine and chassis wear.

First, let us discuss engine wear. There are three general types of engine wear—abrasive, friction and corrosive. Abrasive wear is caused by foreign particles in the oil and in the air the engine breathes—dust, soot, carbon, metallic flakes, etc. This matter literally grinds the engine to pieces. Frictional wear is caused by actual rubbing contact between adjacent moving parts, like between piston rings and cylinder wall, between crankpin and rod-bearing. Microscopic surface irregularities interlock and tear against each other, thus wearing and damaging the parts. Corrosive wear is just what the name implies—a pitting or eating away of internal surfaces by condensed acids and chemicals in the fuel and oil. This wear occurs chiefly at low engine temperatures; during warm-up or stop-and-go driving. Tests show that corrosive wear is 20 times as high when the cooling water temperature is only 60 degrees Fahrenheit as when running at a normal 160 degrees or so. Driving downtown with a cold engine will give twice as much wear as allowing the engine to warm for five minutes before starting out.

It is difficult to determine just what proportion of the total wear in the engine is caused by these three factors, but since much of the average American driving involves cold starts, short trips, and lots of stop-and-go driving, researchers figure that more than half of the normal wear can be traced to corrosion. The next most important factor is abrasive wear, from foreign materials; while frictional wear counts the least—such as you would obtain driving at a steady speed down a clean, dust-free highway. This last, by the way, is the easiest operation on an engine.

We all know that modern automotive engines have a longer and more useful life—before they develop excessive oil consumption, loss of power, noises, etc.—than engines of 10 or 15 years ago. There are many reasons for longer life: Closer machined tolerances inside the engine, improved materials, chrome rings, more efficient fuel, oil and air filters, additive oils, etc. And here is an important angle you may not have considered. Research shows that wear between rubbing parts of an engine (as a percentage of the overall dimensions of the parts) is proportional to the rubbing velocity and inversely proportional to the dimensions. Thus if you can stand .010 inch of wear in a 3¼-inch cylinder bore, you can take .013 in a 4¼-inch cylinder. Modern short strokes and low axle ratios reduce piston speed so that ring and bore wear per mile are only a fraction of what they were years ago. In other words, our modern, big-bore, short-stroke engines would show less wear than older designs even if we had not made progress in metallurgy, filters, manufacturing, etc. *(Continued on page 62)*

MAINTENANCE





Air cleaner and oil filter maintenance can be quite expensive if continued on the manufacturers' suggested schedule. The important thing to consider is "do you need it?"

Chassis wear, on the other hand, differs from engine wear in that the corrosion factor is not so critical and we do not have the high rubbing velocities between parts. The chassis' useful life is generally longer than mechanical parts, both in terms of miles and years. In fact, a well-maintained chassis should out-live two engines. (This refers to items like wheel bearings, ball joints, U-joints, rear axles, bushings, manual shift transmissions.) The chassis items that need careful attention include brake linings, tires, shock absorbers, and the friction elements in automatic transmissions. In fact, these are probably the most critical items in the overall safety and reliability of every automobile. You just have to maintain them.

Possibly the most discouraging aspect of a car's aging process is the "gradual loss of performance," particularly so since most owners seem to cherish acceleration above all else. There are many factors involved here: Spark plugs foul up, ignition points burn, coils weaken, spark timing slips, piston rings and valves lose the sharp seal they had when new, carbon deposits foul combustion and restrict breathing through the valves, fuel deposits foul up the carburetor. All of these things combine to reduce the efficiency of the engine, which means less horsepower and torque—and more fuel consumption.

Although test data on worn-out engines is not plentiful, one such report showed a loss of 2½ miles per gallon due to dirty spark plugs alone. Another test on a particular engine, when new and after 25,000 miles of driving under relatively rough dust and dirt conditions, showed a drop of 24 per cent in horsepower and 21 per cent in gas mileage. Another showed an eight per cent power drop after only 3000 miles, because of carbon deposits in the combustion chamber. These may be rougher-than-average conditions, but it is a cinch we cannot expect new car performance to last.

Now, how does all this information fit into the maintenance picture? For clarification, I will discuss this under the four major maintenance areas—engine tune-ups, oil changes, engine overhaul, and chassis maintenance.

The familiar commercial tune-up job is about the only practical method to restore performance lost through the type of deterioration outlined above; and even then, only part can be restored. A normal tune-up consists of cleaning and gapping the plugs, replacing distributor points, checking spark timing, coils, condensers, battery, manifold heat valve, carburetor, etc. A major tune-up will include a carburetor overhaul. The flat rate price of a regular tune-up will average $10 to $12, plus parts that need to be replaced, while the major job will generally run between $20 and $25. It is difficult to make any flat statement as to how much a tune-up will help performance, but, let us say that on a car that really needs it, acceleration might be improved 10 to 15 per cent, and one or 1½ miles per gallon be added to the mileage.

Generally, factories do not make recommendation for engine tune-ups at specific mileage intervals, preferring to leave it to the owner to do the job when his performance begins to drop. But the real question is, can the tune-up be justified on an economic basis? Let us place the average prices of the job at, say, $15, and it would increase our overall average gas mileage for the next 10,000 miles from 14 to 14¾ mpg. Assuming gasoline at 32 cents per gallon, our total fuel cost for those 10,000 miles would be $228 if we did not tune the engine, and $217 if we did. The $11 saved would not pay for the tune-up.

Now this is just one example, one situation, and you might argue that the relationship is not valid in many cases. This is true. For instance, if an engine had not been touched for two or three years, a thorough tune-up job might conceivably boost gas mileage 2 or 3 mpg in the next 10,000 miles, which, of course, would more than pay the repair cost. But on the average case, I think a twice a year frequency for tune-ups cannot be justified on a dollars-and-cents basis; and even the usual once-a-year frequency is definitely on the borderline. The best schedule is a tune-up every 18 to 24 months, I believe.



One of the important chassis items that needs constant checking is the brake system. Others include wheel bearings, bushings, transmission, U and ball joints and rear axles.

Incidentally, there is no evidence that a tune-up really makes the car basically more reliable. Serious troubles like battery failure, poor points, condensers, etc. usually give plenty of warning. Many drivers have used older models for two or three years without a tune-up, through cold northern winters, without a whisper of difficulty, just replacing parts as trouble crops up. Think it over.

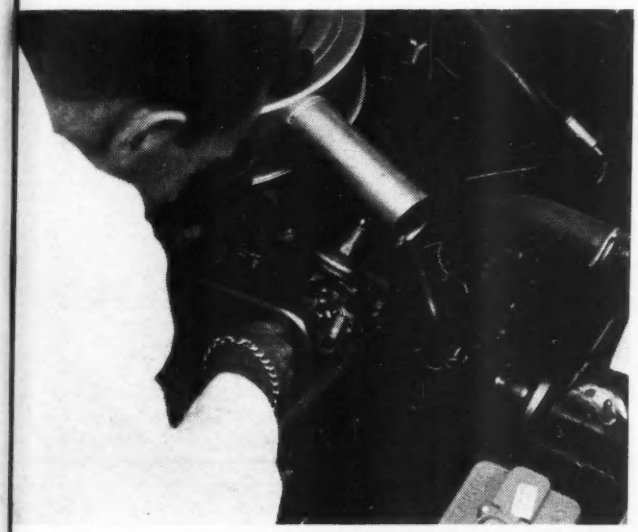
We now arrive at the second area of maintenance—oil changes. Detroit has become more lenient on oil change recommendations during the past 10 years, because of developments in filters and modern additive oils. Whereas the classic 1000-mile change period was still pretty much in vogue in the late

1940's, today's minimum recommendations for normal driving are 2000 miles, and some factories are allowing a figure as high as 6000 miles.

Today, however, we find more and more motorists taking advantage of the new dual-range oils, wide viscosity range suitable for both winter and summer, and going a year or more between oil changes. I have talked to many drivers with more than 20,000 miles on their cars who have never changed the oil after the break-in period was completed. These people are wondering if that $1.50 to $2.50 per oil change is not just thrown away—that the engine does not know the difference. If the oil is changed, say, at 3000 miles, instead of 10,000 will it make any difference in the useful life of the engine, they ask.

Automotive technical literature unfortunately, is short on test data stretched out over such long distances, so it is difficult to give an exact answer. We know that abrasive wear, caused by impurities in the oil, can be rough, but it is also true that dust coming in through the carburetor is usually more harmful than dirt in the oil. Air filter maintenance, thus, is most important to engine life. Gasoline dilutes a lot of oil in cold weather when the choke is used, but this is largely boiled out at high speeds on the road.

A sensible compromise, it seems to me, between maintenance



Engine tune-ups are expensive, but are they necessary? The writer believes a car owner should take a different view of maintenance and balance it with good economic sense.

costs and engine life, might be an oil change and oil filter replacement once a year, or at 10,000-mile intervals. For cars without filters, the oil change interval should be 5000 miles.

The third area concerns engine overhaul. Recently, a survey of auto service garages in the New York area was taken to determine why cars are brought in for a major engine overhaul. Only eight per cent involved actual mechanical failures; almost the entire balance of owners, more than 90 per cent, only complained of "burning oil." In other words, a majority of the owners, were paying anywhere from $150 to $400 to save a few quarts of oil at 40 cents per quart. Is this good economics?

Let us look at it this way. The average engine in good condition will consume a quart of oil every 1000 miles or so. This amounts to about $\frac{1}{100}$ths of a cent per mile, or a negligible cost in comparison with the cost of gasoline and other operating expenses. A fairly heavy "oil burner" will use a quart every 100 miles or so, and a "real dog," will lap up a quart inside 50 miles. In this case, you would be burning cheap re-refined oil at 20 cents per quart or less, but your cost per mile would still be less than one-fourth of the gas cost. In 10,000 miles, and burning a quart of oil every 50 miles at 20 cents per quart, you would be spending upwards of $40. This beats sinking $150 or more in an overhaul job on a car that is probably more than five years old.

About the only conditions under which you can justify a major engine overhaul is an outright mechanical failure, or fear of imminent failure, or if you want to preserve a particular car for sentimental or other reasons. You cannot justify it on a basis of overhaul cost vs. oil cost. If you want to obtain the maximum possible miles per dollar, it is best to literally "run your car into the ground," and then sell it for the best price you can get at that time.

And now we turn to the final area of maintenance. As mentioned earlier, the life of most chassis parts is considerably longer than engine life, and maintenance is not so critical. The critical points are tires, brake lining and pedal adjustment, shocks, and friction elements in automatic transmissions, failure of which can stop you as cold as a dead engine. Most factories recommend a general chassis lubrication every 1000 or 2000 miles. It is difficult to say just how important these are to the overall life of the chassis, but they do help to keep the car running smoother and quieter; and at a price of a $1 or two you cannot go far wrong. Have it done once in a while. The principal thing is to watch those critical points, like tire treads and side walls and pressure, brake efficiency, shocks, which can greatly affect your control over the car at high speeds; and those automatic transmissions. On the latter, the motorist is generally given advance warning of trouble, but occasional checks can help forestall it.

Well, I do not expect the foregoing will make me popular with the factories and auto service industry, but it is a subject I have been thinking about for some time. The majority of American car owners know little about the inside workings of their automobiles, and they are ripe targets for the service industry's propaganda about 1000-mile oil changes and 50,000-mile major overhauls. They have been taught for years to have a healthy respect for the maintenance requirements of their family car. But it is the occasional owner who comes along, ignores all the rules, neglects his car, and does everything against the book, and then gets by without any trouble, that brings on the skepticism. I think an owner can take a more relaxed view of his maintenance. I certainly do not advocate outright neglect or abuse, but our modern cars can just stand up better than they did 20 or 30 years ago.

Do not worry about engine tune-ups unless you are primarily interested in performance; on a dollars-per-mile basis they cannot be justified more often than every 18 months. The oil change period is not critical; make it once or twice a year and change the filter element at the same time. If your engine has 60,000 or 70,000 miles on it and is beginning to hog oil, don't panic, just start using cheaper oil, and ride it out. You might be able to drive it another year or two before you begin hearing those knocking noises that announce real trouble. If you have no important attachment to the car this is the time to dump it, not overhaul the engine. If you really want to keep the car, then a complete rebuilt short block is generally more economical in the long run than a piece-by-piece buildup of an old, worn-out engine. Chassis lubrication is another area that is not too critical, but the cost is low, and two or three lube jobs a year will not break you. The important points, of course, are still tires, brakes, shocks and the automatic transmission.

I would like to bring up one last point. We might as well face the fact that a lot of garage mechanics are careless about routine maintenance jobs. For instance, in a regular tune-up job they are supposed to pull the distributor and check the spark curve on a Sun machine. This is seldom done—just slap in a new set of points, check the static timing with a light and then forget it. Moral: If possible have a reliable garage you can depend on do your maintenance.

And then save money by doing less of it!



A hot American V-8 and one of Europe's most beautiful bodies team up in the new...

Facel-Vega Excellence

SOMETHING NEW AND TERRIFIC is being turned out these days —at the rate of about eight a month—in the factory of Facel, S.A. in Paris. Of equal interest to Detroit and foreign car enthusiasts is the new "Excellence" four-door hardtop sedan powered with the big 383-cubic-inch Chrysler engine. Developing 335 raging horses at 4600 rpm, the Excellence, with its easily serviced American engine and Torqueflite transmission, outperforms anything from Chrysler short of the 300-F.

A large car, that successfully combines the hallmarks of both gran turismo and sportscars, the Excellence is considerably different from the familiar H.K. 500 coupe that has made such an impression upon enthusiasts in recent years. Increased in length and wheelbase by some 25 and 20 inches, respectively, and heavier by 250 pounds, the Excellence also costs several thousand dollars more, but, for those who appreciate top quality and have the necessary cash to pay for the pleasure of owning such a mount, there are many mechanical and design compensations.

Innovation and attention to intricate details are immediately apparent when the doors are opened. Hinged at the front and back, respectively, there is not the slightest hint of a door pillar. Latching is effectively and tightly accomplished by lugs built into the door sills. Thus, even though the rear seat compartment may be somewhat foreshortened, entry is easy.

Sliding into the driver's seat—a soft bucket which is leather-upholstered as is the entire interior except for the headliner—requires minor care to clear the dogleg of the fully wrapped windshield. Firing up the first time makes one aware that he is about to drive a car combining the best of American and French components. Since the engine, ignition system, and transmission are of domestic origin, it is no surprise that the ignition key is also a standard Chrysler part. The key is used for conventional starting after making certain the Torqueflite automatic button-actuated control is in NEUTRAL. The engine springs to life with that powerful Chrysler roar.

As the automatic's control is at the left and flush with the vertical polished walnut facia, the reach required of the left arm is a bit farther than in a Chrysler car. As on the 300-F there is a large tachometer redlined at 4600 rpm (on the optional four-speed Pont-a-Mousson synchromesh box with dual four-barrel carburetors and 360 hp, maximum safe revolutions are marked at 5200). A matching dial on the right contains a Jaeger speedometer incorporating total and trip odometers. Both of these dials are placed rather low and require looking through the steering wheel. Above the column are four warning lights for oil pressure, headlight beams, turn signals, and fuel level, which begin flashing when five of the total tankage of 33 gallons remain. In the center over the high transmission tunnel are an electric clock and smaller dials for oil pressure, radiator temperature, fuel, and state of the generator.

Since the familiar Torqueflite gives a first-gear start, there is no perceptible advantage to pushing in the LOW button; thus all runs were made in DRIVE. The transmission is identical to stockers on Chryslers, as are the shift points. Four runs in each direction from 0 to 60 mph, reading 62 indicated, averaged 8.8 seconds. This is hot and brought to mind the performance of the 300-F, the only domestic in the luxury class that can whip the Facel-Vega Excellence in completely stock trim. Other runs were made to a calibrated 100 mph and again the performance potential of this exciting car manifested itself in the 21.3 seconds it took to reach the magic mark with two aboard.

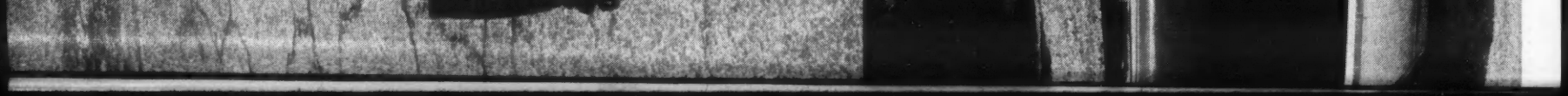
In other words, here is a fine car that can be whipped around faster than many a sportscar and certainly with greater abandon, and more security, than any domestic luxury car. The steering is a bit slower than on Chrysler products and a power boost is employed. This system, a cam and roller domestically made by Gemmer, leaves a good feel of the road to the driver—no vibration or shaking comes through the system and up the column, but there's no annoying deadness either. Here again a comparison becomes unavoidable for the Facel has 3.75 turns lock-to-lock vs. Chrysler's 3.5 turns. The wheelbase, being a bit shorter than the 300-F, enables somewhat shorter turning between curbs; 42 feet by measure being required.

Big cars—and this is one with just a hair less than a 125-inch wheelbase and an overall length of nearly 207 inches—generally mean that the boulevard, only, is the best thoroughfare. Nothing could be further from the truth. After the freeway, the fast roads through the deserts revealed the passing power and quietness, while the effortless output of the big engine brought satisfying and continuous high cruising speeds. We took to some gravelled side roads. A good fore-and-aft weight distribution, and the solidness of the all-welded steel body, enabled high-speed work on roads never built for speeds over 50 mph. The suspension, on the firm side, with individual coil springs and semi-elliptic leaf springs front and rear respectively, resists extreme heeling over in hard corners and maintains a better than average front-end level in dips or fast stops. All French, this suspension is well snubbed with hydro-pneumatic telescopic shock absorbers. The rear axle, a conventional British-made Sallisbury unit, has a ratio well chosen, and hopping or skipping could be induced only by overdriving the car on rough roads and particularly in corners, abrupt rises, or dips. On the latter, one had to deliberately push this car to induce bottoming. The Excellence wants to maintain a level stance and will do so if the driver gives it half a chance.

On mountain roads the car handles switchbacks and reverse-camber curves like a sportscar and with a pleasing absence of tire squeal if given the benefit of common sense behind the wheel. Large 15-inch wheels with 7.60 tires, smaller than on

Long considered the French version of everyone's dream car, the Facel-Vega only adds to this image by placing a big Chrysler engine under its pretty hood. Note the unique door openings that make the car a true hardtop.






PETER SATORI



large domestics, handle road irregularities superbly. With all four tires at 30 psi, the Facel four-door can be driven into sharp corners, after depressing the 2nd gear button to keep the box in this ratio, and brought around with remarkably less lean than is the usual case with large sedans. The tremendous torque available beneath the hood will, when correctly applied, keep the tail end in line with no trace of wag.

The brakes, aluminum drums of 11.25 inches and 11.0 inches diameter front and rear, respectively, provide lots of braking surface. Nose dive is very slight, and as the front drums are air-cooled, tendency to fade is less noticeable than on any large, luxury domestic car. Panic stops from 60 mph to a standstill repeatedly failed to evidence fade until the seventh stop; and then braking power remained to stop safely, although pressure on the vacuum-boosted pedal had to be increased. The brakes cooled quickly in 1.6 miles and were again ready for fade tests. As this test was accomplished on a day when the ambient temperature stood at 91° F., this fade resistance was another good indication of the Facel's handling safety.

Facel-Vega Excellence

Whether accelerating for maximum performance, or handling this car on roads calling for top roadability qualities, the sensation imposed on the driver and passengers, if any, is never one of neck-snapping or tending to slide across the seats. Instead, one is snugly held in seats that can be most closely compared with those in the Mercedes-Benz 300 series sedans: buckets in front with a folding armrest between and a bench seat with another wide folding armrest centered in the rear. Armrests on all four doors complete the seating which is not likely to be exceeded by any passenger car regardless of price.

The quality of luxury has few peers: a mirror for a lady passenger up front occupies the place of the usual dashboard glovecase; deep bins in each front door ahead of either armrest handle the small package situation. There is a large ashtray on the center tunnel at the base of the full-width dash and a lighter adjacent. The top of the tunnel also contains a selection of auxiliary controls for the rear-mounted Mark IV air conditioner —another domestic component, but installed at the French factory as standard equipment on all Excellence models—a passing light pushbutton, electric windshield washers, etc.

The utmost in roadable plush is enjoyed by those two persons occupying the rear seats. High at each side is a domelight and cigar lighter, while on the backside of the center front armrest support is a complete makeup kit containing chrome-handled brush and comb and two perfume bottles. The contents of the latter must be owner-supplied. A small folding extension on the back of each front seat provides table space for each rear passenger. Only the Eldorado Brougham, of all American cars, approaches the luxury contained in the Excellence. In Europe, only the Rolls-Royce Countryman can boast of such creature comforts, and then at another $4000 or $5000.

Definitely offering a sporting ride and feel, the Excellence can be equalled only in this category by the Mercedes-Benz 300 sedans; the latter have the ride and the handling to match, but the Facel performance exceeds by a wide range. Here, simultaneously, is a car for the opera and the open road all in one package at a price comparable to the Eldorado Brougham.

Only the Chrysler 300-F can surpass the Excellence's handling qualities and performance, and this it does without argument. The 300-F's interior, however, while luxurious and spacious, cannot be rated on the same level with the Facel. The Excellence does have a better ride. Small bumps, pavement dividers, and the like, which manifest themselves slightly to the occupants of a 300-F, are not felt at all in the Facel, while ruts that cause minor shudders to the best this country offers are mere tremors likely to be completely overlooked.

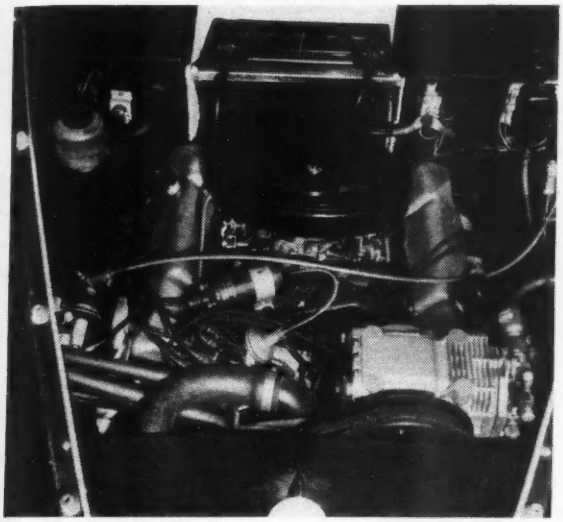


The Excellence differs considerably from the familiar H.K. 500 coupe that has built up the Facel-Vega reputation. It is nearly two feet longer in wheelbase and overall length.

Perhaps the finest thing about this car is that it can be mechanically serviced anywhere on this continent. Hardly a hamlet exists without a mechanic reasonably able to provide Chrysler service. Lubrication is by conventional fittings easily spotted from beneath; the ignition is Autolite, and standard Chrysler and Imperial parts are replaced, repaired or serviced once the hood is raised. The latter, happily, releases from beneath the facia, keeping unwanted hands out of the works. The engine compartment, it must be admitted, is rather crowded, with the most space-filling item being the large York compressor immediately behind the radiator header tank. Mechanics, however, will feel at home under the Excellence's hood; getting at the spark plugs offers the same obstacle course as do domestic Chryslers.

To realize the full potential of performance available at the touch of the accelerator, one would have to be on the dry lakes or risk the ire of the law. On an available strip, after a reasonable wind-up, the car reached an indicated 124 mph and there was some *go* remaining. Unfortunately, the space available did not equal the Chrysler engine's abilities. On the sand of Daytona, for instance, the potential maximum speed in stock tune should easily be on the order of 126 to 130 mph or possibly more. Yet, the Facel is *gran turismo*—and the car deserves this categorical name. It is completely tractable and silently smooth at city traffic speeds. Of course, you must use premium-grade fuel with the 10-to-1 compression ratio, and there is a slight tendency to load up if traffic conditions require stopping and starting up every few feet. This condition, when encountered, was quickly remedied by idling with the NEUTRAL button pushed in, giving the engine an opportunity to rev up and get its breath and proper mixture once again.

The quality matches the performance, handling, and what is normally expected of a coach-crafted car of this price class. Close inspection of the car, by the way, disclosed two minor afflictions: one small area where the lacquer was starting to peel (high at the left rear near the rain gutter) and an air leak on each side. The latter, perhaps designed into the car, is at the top of the joint made by the opening edges of the doors; there is a metal-to-metal fit faced with stainless steel which is not fitted with weather stripping. When the doors are closed there is an air gap about 3/16-inch wide and 1½ inches long on either side. Curiously this gap produces no draft at any speed and in fact allows a proper interior vent



Power for the F-V is supplied by the 383-cubic-inch Chrysler V-8. A single four-barrel provided carburetion on test car which went from 0 to 60 mph in 8.8 seconds.



when running with the air conditioning system operating, eliminating the usual need for having the window down a fraction of an inch. Highest quality workmanship is evident: there were no loose threads on the fastidiously crafted leather upholstery, the walnut dashboard was without visible flaw, the instruments were installed at the correct angles (a factor that frequently seems hurried), all moldings around windows and windshield were applied perfectly, and everything functioned to perfection.

Fuel economy cannot be expected to be the best in such a car: we averaged 10.2 mpg in the city and 11.9 on highways.

The view out is excellent for all occupants including the driver; looking down the long hood toward the nose, where it narrows dramatically, gives one the feeling of latent power, something this machine has in abundance. Unfortunately, each extreme side of the wrap-around windshield has too much distortion. The trim, discreetly used and without ostentation, is of high quality and, because it is of stainless steel, will last indefinitely. Every conceivable under part of the steel body is undercoated for corrosion resistance. The result is one of the quietest car ever tested; only the Cadillac can equal it.

Of course, if one is thinking of limousine roominess, particularly in the rear seats, then the Excellence has a peer in each of the Big Three's top cars. The rear seating has sufficient width for three adults, but legroom is definitely limited to the position of either front seat, each of which has a full seven inches fore and aft adjustment. Actually the rear seat is best for two, with the center armrest in position. Thus, the rear seat's available legroom can best be compared with that of the current Thunderbird. Up front, however, there is sufficient legroom for six-plus-footers.

As a cross-country touring car, with its high performance and the luxurious interior, the Excellence has no domestic equal for two adults and a couple of youngsters. One can suffer a mechanical emergency virtually in the middle of nowhere and yet have the assurance that any competent mechanic or parts house can rectify the situation. Such serviceability alone is worth much. The quality of the entire package leaves nothing to be desired. Finally, the spacious trunk, fitted with a most complete tool kit with several electrical spares, will carry all the luggage usually required by the average family on tour.

At the basic price of $12,800, it is doubtful if this car can be topped in its class.

Test Car

TEST CAR: Facel-Vega
BODY TYPE: Four-door pillarless hardtop sedan
BASE PRICE: $12,800 (West Coast)

Maneuverability Factors

OVERALL LENGTH: 206.7 inches
OVERALL WIDTH: 72.0 inches
OVERALL HEIGHT: 54.5 inches
WHEELBASE: 124.8 inches
TREAD, FRONT/REAR: 55.9 and 57.0 inches
TEST WEIGHT: 4315 pounds
STEERING: 3.75 turns lock-to-lock
TURNING CIRCLE: 42 feet curb-to-curb
GROUND CLEARANCE: 5.5 inches

Engine and Drive Train

TYPE: 90-degree ohv V-8
DISPLACEMENT: 383 cubic inches
BORE & STROKE: 4.03 x 3.75 inches
COMPRESSION RATIO: 10.0
CARBURETION: single four-barrel
HORSEPOWER: 335 @ 4600 rpm
TORQUE: 425 lbs.-ft. @ 2800 rpm
TRANSMISSION: three-speed automatic
REAR AXLE RATIO: 3.31

Performance

GAS MILEAGE: 10 to 12 mpg
ACCELERATION: 0-30 mph in 3.9 seconds; 0-45 mph in 6.1 seconds; and 0-60 mph in 8.8 seconds.
SPEEDOMETER ERROR: Indicated 30, 45 and 60 mph are actual 30, 44 and 58 mph respectively.
POWER-WEIGHT RATIO: 12.89 lbs. per horsepower
HORSEPOWER PER CUBIC INCH: .874

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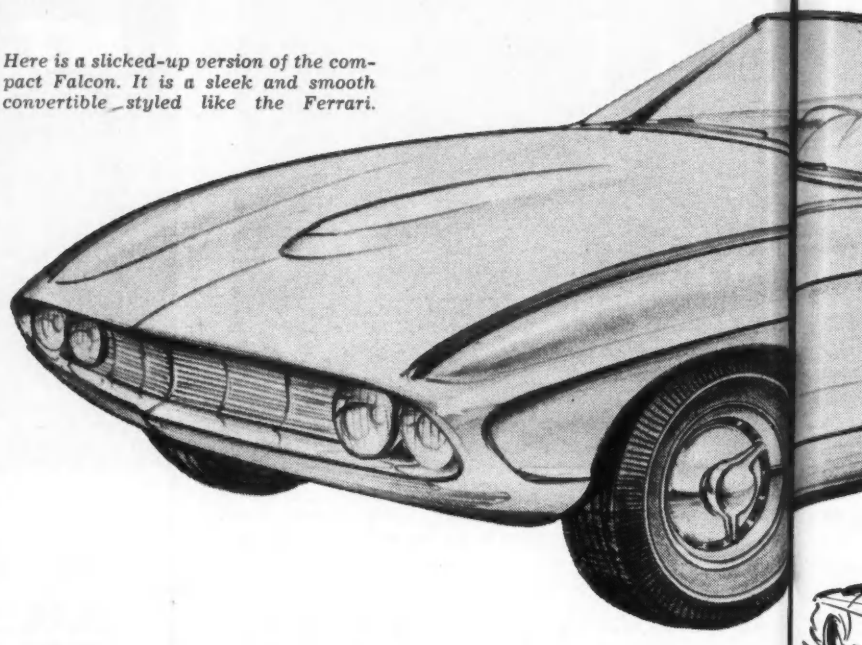
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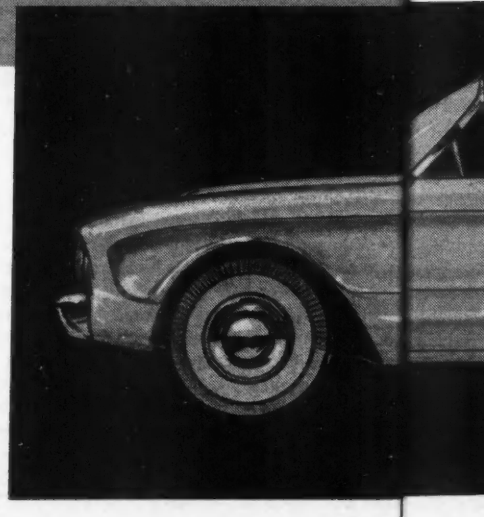
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Here is a slicked-up version of the compact Falcon. It is a sleek and smooth convertible styled like the Ferrari.

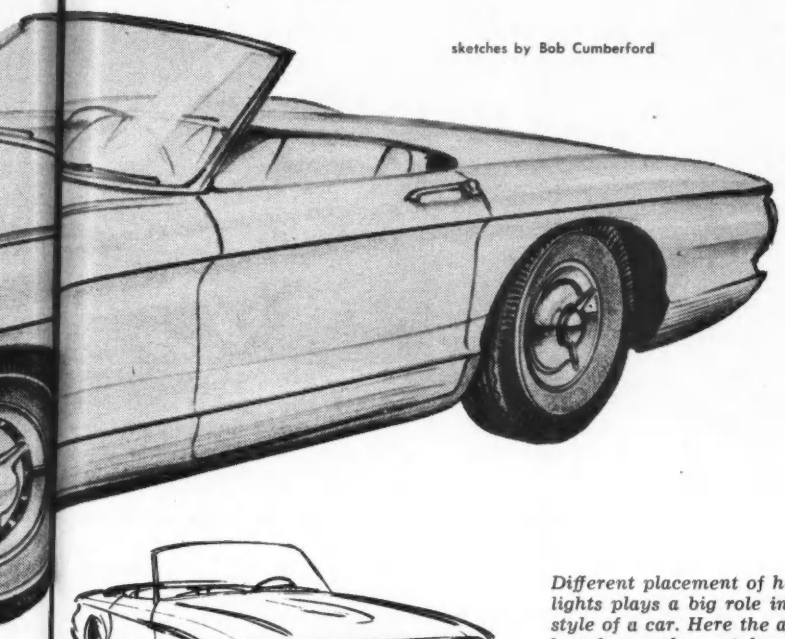


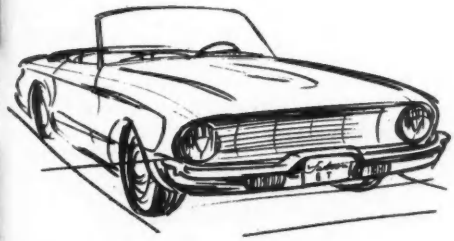
FALCONS FOR FUN



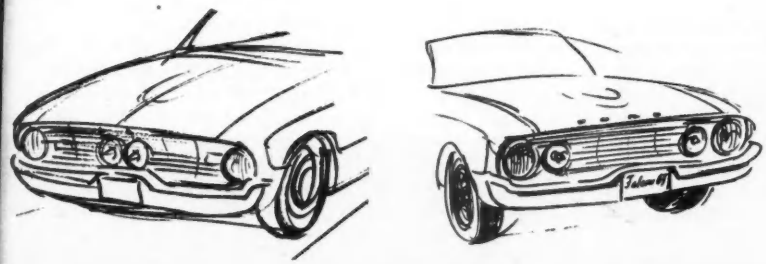
Artists always like to redesign objects —interpret them in a new light. Automobiles are no exception and Artist Bob Cumberford here displays his own sketches on Ford's compact Falcon. Influenced by the sleek, racing look of the Ferrari, he has drawn a low-slung, clean-lined automobile. The hardtop version is shown right, while the convertible is pictured at the top. He has lowered the hood, changed the grille by adding an additional headlight on each side, redrawing fender wells.

sketches by Bob Cumberford



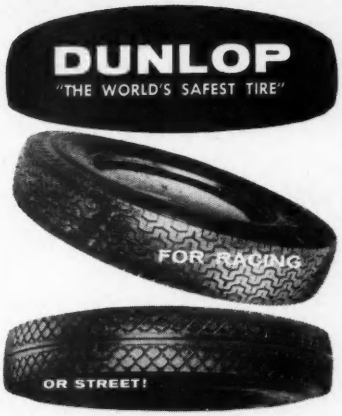


Different placement of headlights plays a big role in the style of a car. Here the artist has drawn three styles. The bottom left shows the use of two Lucas lights in the center of the grille, while bottom left pictures the lights paired with the regular headlights.





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MASSIVE AIR SCOOP GRILLE DOMINATES THE 1960 CHRYSLER NEW YORKER. GOOD ROADABILITY AND WORKMANSHIP STOOD OUT IN TEST.

CHRYSLER new yorker

FOR ALL-AROUND PERFORMANCE, comfort and economy, the Chrysler New Yorker for 1960 is unsurpassed in the upper medium price class. It is both roomy and comfortable, with a surprising amount of wallop for its size and weight.

Characterized by a massive air scoop grille which dominates the 1960 Chrysler line, the New Yorker has been treated with a minimum of ornamentation but blessed with integrated rear fins that set it apart from its companion models of Chrysler cars. Slightly longer than Buick's Invicta but shorter than either the Olds 98 or Pontiac Bonneville, it offers more legroom and as much or more head room than its competitors.

As mentioned in previous road test accounts, the Chrysler products are noted for their roadability, and the New Yorker is no exception. Although the single unit construction of body and frame—greatly improved over the 1959 model—is set on a wheelbase similar in size to competing models in the upper medium class, the New Yorker is far ahead when it comes to cornering or just plain cruising. This can be attributed in part to the torsion bar front suspension which, combined with outboard-mounted, semi-elliptical, rear leaf springs, guides the car through the tightest of turns with minimum sway and tire squeal.

Performance-wise, the New Yorker's husky 413-cubic-inch V-8 powerplant, biggest in its field and used also on the Imperial, is capable of clicking off the 0-60 count in 8.9 seconds despite a weight of some 4400 pounds and a rear axle ratio of 2.93. As for economy, 12 to 15 mpg is fairly impressive for the kind of performance that goes with it, and much of this can be attributed to Chrysler's Torqueflite transmission. Gear changes are smooth and offer a minimum of slip, plus a tendency to free wheel when the throttle is backed off.

The 413-cubic-inch engine, which serves also as the basis for the Chrysler 300-F, contains a single four-barrel carburetor and has a compression ratio of 10.1 to 1. Neat and compact, it allows considerable room under the hood for maintenance and servicing. It develops a maximum of 350 hp at 4600 rpm as compared to 325 for the Invicta, 315 for the Olds 98 and 281 for the Bonneville.

Fine handling characteristics of the New Yorker are augmented by a smooth and comfortable ride. Seating, especially with the optional six-way power seat, affords better than average comfort for driver and passengers alike. A carefully designed back cushion provides the driver with cushioned support to the small of the back where fatigue is most likely to occur. Slightly more than 46 inches of legroom do a great deal toward eliminating the confined, cramped feeling of a long journey.

Several interior innovations have been added this year, designed to increase comfort and cut down on driver fatigue. One of the most pleasant and interesting is the Astra-Dome instrument panel in which all controls, gauges and dials are grouped directly in front of the driver and spaced between the steering wheel's two spokes for an unobstructed view.

At night, the dome resembles somewhat a planet in space, and it is lit by seven wafer-thin electroluminescent panels which glow in a pleasant green color. This is a refreshing change from the average glare of instrument lights. Although brightly lit for easy reading, glare is almost entirely eliminated.

Electroluminescent lighting is not new to the auto industry. It was used several years ago on the radio dials of the 1956 Rambler. This is, however, the first time it has been applied as an instrument lighting system, and its success indicates that its use in the future may become universal. Called EL for short, the system operates by sending current through phosphor to give a low level light source that is highly visible at night. These new EL lamps are virtually unbreakable, too, and their life expectancy exceeds 10,000 hours as compared to the 300 to 1000 hour life of the ordinary electric bulb.

Different entirely from the usual bulb, the EL lamp is a piece of thin, durable metal coated with several ceramic layers including glass-based, electrically conducting material, hermetically sealed in transparent glass. Total thickness of all layers applied to the metal base is less than one-fiftieth of an inch.

Another interior innovation on the '60 New Yorker is the relocation of the turn indicators from the steering column to a position on the dash, just left of the wheel. This takes some getting used to, but aids in giving the instrument panel a clean,

unobstructed look. Automatic transmission and heating controls, located to the left and right of the Astra-Dome panel, are of the pushbutton type, and these two are well lighted at night.

The ride itself is comparatively quieter than on previous models, because of unibody construction. A small amount of wind noise can be experienced at high speeds on the highway, but not enough to be bothersome. More noticeable and annoying is a strong vibration, felt from the front end and transmitted through the engine where it can be felt through the throttle. After careful examination, the trouble was traced to the captive-air front tires which set up the vibration at approximately 70 mph.

Braking, while considered good under most conditions, has a tendency to fade with constant use. Total-contact brakes are used on the New Yorker this year, containing two cylinders for each wheel so that more lining area comes in contact with the drum. The brakes are self adjusting, with Cyclebonded linings for longer life.

Quality and workmanship, as on all Chrysler cars for '60, have been greatly improved. Lines are cleaner and panels generally better fitted for a better overall appearance.

Trunk space is adequate, and slightly larger than Buick, but smaller than either Oldsmobile or Pontiac. Convenient location of the spare tire, however, allows ample room for the average trunk load, and the extension of the trunk lid almost to the top of the rear bumper allows for easier loading and unloading.

The usual options are available to go along with such standard items as automatic transmission, Golden Lion V-8 engine, back-up lights and safety cushion instrument panel. These include air conditioning, vacuum automatic door locks, undercoating, tinted glass, and captive air tires. The extra-large rear window, which is standard on the New Yorker, has been made available as an optional item for the Windsor and Saratoga.

Five body styles have been made available for 1960, and these include the four-door sedan, two- and four-door hardtops, convertible and station wagon. Manual transmissions are not available in any New Yorker model.



Plush interior marks the 1960 New Yorker. Instrument panel is grouped in front of driver and is lighted by wafer-thin electroluminescent panels, which help cut down glare.



Test Car

TEST CAR: Chrysler New Yorker
BODY TYPE: 4-door hardtop
BASE PRICE: $4461

Maneuverability Factors

OVERALL LENGTH: 219.6 inches
OVERALL WIDTH: 79.4 inches
OVERALL HEIGHT: 55.6 inches
WHEELBASE: 126 inches
TREAD, FRONT/REAR: 61.2 and 60.0 inches
TEST WEIGHT: 4480 lbs.
WEIGHT DISTRIBUTION: 54 per cent on front wheels
STEERING: 3.5 turns lock-to-lock
TURNING CIRCLE: 46.6 feet curb-to-curb
GROUND CLEARANCE: 5.9 inches

Interior Room

SEATING CAPACITY: Six
FRONT SEAT
HEADROOM: 34.6 inches
WIDTH: 63.0 inches
LEGROOM: 46.2 inches
TRUNK CAPACITY: 17.7 cubic feet

Engine and Drive Train

TYPE: Ohv V-8
DISPLACEMENT: 413 cubic inches
BORE & STROKE: 4.18 x 3.75
COMPRESSION RATIO: 10.1
CARBURETION: Single 4-barrel
HORSEPOWER: 350 @ 4600 rpm
TORQUE: 470 @ 2800 rpm
TRANSMISSION: 3-speed automatic
REAR AXLE RATIO: 2.93

Performance

GAS MILEAGE: 12 to 15 miles per gallon
ACCELERATION: 0-30 mph in 3.7 seconds, 0-45 mph in 5.7 seconds and 0-60 mph in 8.9 seconds
SPEEDOMETER ERROR: Indicated 30, 45 and 60 mph are actual 31, 47 and 63 mph respectively
POWER-WEIGHT RATIO: 12.6 lbs. per horsepower
HORSEPOWER PER CUBIC INCH: .847



A monthly summary of the latest foreign car news from our overseas correspondents

AROUND THE WORLD *IN 30 DAYS*

A MERGER AND A MODEL discontinuance top the latest automotive news from England. Jaguar Cars has purchased the Daimler Company of Coventry from the B.S.A. Group for an estimated price of $12 to $18 million dollars.

Daimler will continue to manufacture cars, buses and its armored vehicles, but a large part of the factory space will be used to increase Jaguar's production from its present 450 units per week.

Jaguar's top executive, Sir William Lyons, said the purchase has solved his firm's expansion problem of finding additional factory space close to the main plant. Since the government has forbidden more construction in the area, most of the automotive firms have had to move to Liverpool or Scotland to expand. The Daimler plant is only five minutes from Jaguar.

Jaguar needs the additional space for research and development of new models and parts, and for 1961 production of its new, large car which has, provisionally, been named Mark X.

Present Daimler cars in production include the Majestic 3.6-liter, and the SP 250 sports 2½-liter with the V-8, 2500-cc light alloy engine. The Majestic Major, with a 4-liter, V-8 engine, is expected to be placed into production. With current Jaguar engines approaching the end of a long and successful career, it will be interesting to see what uses are found by Jaguar directors for the new Daimler 2½-liter and 4-liter engines.

The discontinuance is the Armstrong Siddeley's Star Sapphire—a victim of the tax collector. Bristol Siddeley Engines, who controlled the firm, said that spare parts for existing cars will be kept in supply.

Introduced in 1952, the Sapphire steadily developed into one of Britain's finest quality cars, fast, silent, well-made, and comfortable. However, few people can purchase a car in this category after paying the British income tax; and the purchase tax cut even more deeply—more than $1100 on the Sapphire saloon, and $3000 on the limousine.

The 150 plant employees will be transferred to lines in the same plant where Sunbeam Alpine sportscars are assembled for the Rootes Group. —G.W.

* * *

A NEW ROLLS-ROYCE Phantom V recently was delivered to Queen Elizabeth. Powered with a V-8 engine, the 7-passenger limousine coachwork was done by Pak Ward. The massive car is finished in maroon and black, with upholstery in West of England cloth; gray for the rear and blue for the front seats. The seats are higher than usual to allow the occupants to be seen during ceremonial occasions. A glass panel is in the roof, while the rear quarters are formed by a transparent plastic molding. For privacy, folding metal quarter panels are installed around the rear quarters, and the roof panel is covered with an electrically operated slide. The car has both heating and air conditioning units, and radio sets for both front and rear. Length of the limousine is 19 feet, 8 inches; width, 6 feet, 7 inches; and height, 6 feet, 1 inch.

* * *

ONE MORNING RECENTLY, a small streamlined car with a plastic dome fitting closely around the driver's head flashed down the Antwerp-Liege motorway at 132.206 miles per hour to set a new Belgian national record for sportscars under 1000-cc. Although it looked like a special machine built purely to make speed records in a straight line, it had been driven out by road from a plant in London. Under the sleek exterior was an Austin-Healey Sprite chassis, and the body itself



A transparent plastic molding in the rear quarters and a sliding glass panel in the roof give a maximum view in Queen Elizabeth's new Rolls-Royce Phantom V. For privacy, folding metal quarter panels are installed around the rear.

was basically the stock Sprite two-seater. The show was staged to demonstrate the results obtained by Speedwell, one of a growing group of firms offering power-packs and speed kits for European touring and sportscars.

The new lightweight plastic hood and fenders were designed by Frank Costin, famous for his work on the bodies for Lotus, Vanwall and Lister. He added a cover over the cockpit, with a plastic dome to enclose the driver's head, designed a higher deck over the tail to delay the development of turbulent air flow, and put covers over all the wheels.

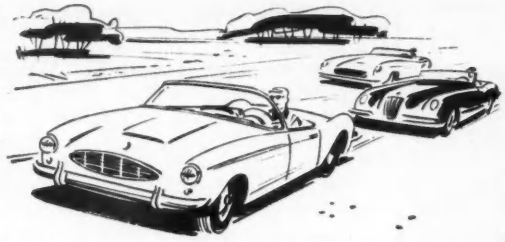
An anti-roll bar and modified shock absorbers were installed on the Sprite chassis, the axle ratio was changed to 3.7 to 1, and 5.25x13 racing tires were installed on the rear wheels. The engine has a stock cylinder head with lightened valve train, modified combustion chambers, and two Amal carburetors. Running on alcohol, it produced more than 80 horsepower.

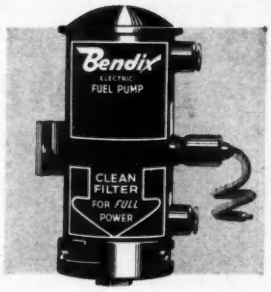


This is a queen's eye view of the interior of the luxurious new Rolls-Royce Phantom V which was recently delivered to Queen Elizabeth. The upholstery in West of England cloth is gray, with matching deep, soft carpeting. The seat is raised to allow her majesty to be seen during ceremonial occasions.

Alexander Engineering, who does work for BMC, Ford, Rootes, Vauxhall, Standard-Triumph, Dauphine, and Simca, offers high-speed kits from about $100 to more than $500. Recently, I met Michael Christie, former racing driver and managing director of Alexander, who had just

continued on page 74





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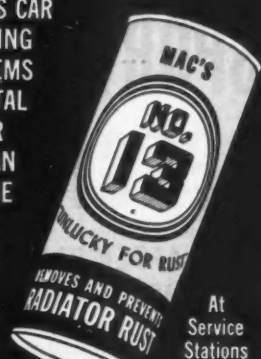
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AROUND THE WORLD *continued*

driven down from Stuttgart to Switzerland, doing the 120 miles in 99 minutes on the Autobahn in his Hillman Minx sedan. Externally, there was little to distinguish it from other Minxes, beyond a colored flash and special wheel discs, but mechanically it was a much modified car; worked-over cylinder head with higher compression ratio, new manifolds, two SU carburetors, a Laycock de Normanville overdrive to cut engine revs by a third when cruising fast and so save fuel; vacuum servo brakes with anti-fade linings, and De Carbon shock absorbers used by both the Mercedes and Facel. Engine modifications and fitting charges run to $168, overdrive adds $235, and brake improvements about $68. The result is a highly personal and innocent-looking car —a real wolf in sheep's clothing—with a surprising performance which can be fully employed without running into limitations of braking or road holding and thanks to the overdrive, without an embarrassing increase in fuel consumption. —G.W.

* * *

STIRLING MOSS SCORED an easy victory in the recent 100-lap Monaco Grand Prix driving the new Lotus Climax. He was half a lap ahead of Bruce McLaren who was guiding a Cooper Climax. McLaren won a close duel for second place over Phil Hill in a Ferrari. The only other car in full running order at the finish was the Yoeman Credit Cooper Climax which Tony Brooks brought into fourth place. Qualifications, as usual, were the hottest events, among the entrants. Lance Reventlow's Scarabs, big and heavy by 1960 standards, did not make it. Later, Moss took the wheel of one to try it out and reported, "Handling too delicate; suspension too hard." Moss's time for the race was 2 hr. 53 min. 45.5 sec., at an average speed of 67.48 mph.

* * *

THE LE MANS again proved to be one of racing's toughest meets on both man and machine. Although won by the Ferrari team of Paul Frere and Olivier Gendebien, Jimmy Clark and Roy Salvadori, driving a DBR-1 Aston Martin, had more than their share of troubles. Reporting on the race, Salvadori said, "I persuaded Jimmie Clark to take the start, as it would get him a lot of publicity, and I thought the second spell would be easier, but when I took over the rain fell down. We were in trouble with our gasket and were pouring in gallons of anti-leak compound. Some must have got behind the rings, because oil started coming out of the breather and slopping about on the floor. Soon there was a mixture of rain and oil inside and outside the windscreen and visor. We stuffed our pockets with rags and tried to give everything a wipe around three times a lap. I was taking it gently, but eventually I got a sign to say I was second. Then I noticed the countryside looked a bit strange at Arnage and found I had run down the escape road, without noticing."

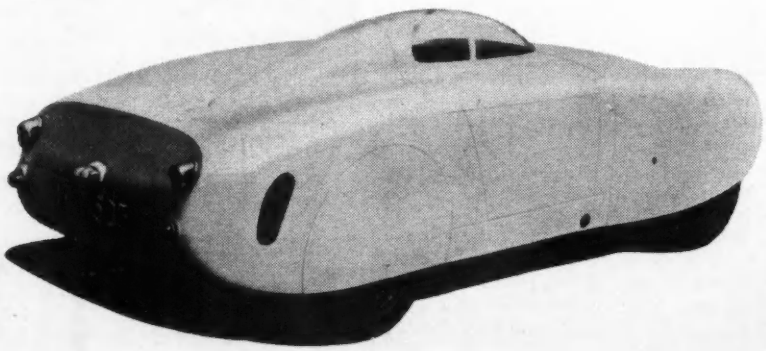
Despite losing their way and mechanical difficulties, the Clark-Salvadori team came in third. —G.W

* * *

THE NEW BORGWARD 2.3-liter, six-cylinder model is a car with a sporty character. Unveiled during September 1959, the new model shows a new, very stylish body and several innovations. Production of the car

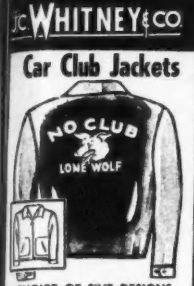
continued on page 76

This sleek exterior covers the chassis from an Austin-Healey Sprite. Designed by Frank Costin, the modification is offered by Speedwell, one of a growing group of firms specializing in power-packs and speed kits for European Cars. Recently it rolled down the Antwerp-Liege motorway at a 132.206 miles per hour clip.



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CHOICE OF FIVE DESIGNS



Whether your sport is hot rods, sport cars, cars, ½ midgets or chess, here is a jacket ad fits any pocketbook or club treasury. It's colorful, high quality coat that is carefully tailored from the finest Dan River sanforized, washable cotton in popular wind-breaker styl- ng. Has such desired features as roomy corded sleeves, easy-sliding zipper front, comfortable ble elastic inserts—and it is treated with Zelan "Aridex" to make it water and spot resistant. Smart-looking enough for dress-up- omfortable enough for work, economical enough to consult your wife.

The classy jacket is available in any of the designs shown above. "NO CLUB—LONE WOLF", "HAVE GOODIES—WILL TRAVEL", "ROAD DEVILS", "NIGHT PROWLERS", "CAM BUSTERS", which are embroidered on back of jacket, and then flocked for a smart-like effect. Choice of 3 colors: Red with White emblem, Blue with White emblem, or White with Black emblem. Men's sizes: Small, Medium, Large, or Extra-Large. When ordering, be sure to specify jacket color, size and emblem desired.

No. 592 —Each $6.95

DUAL MUFFLER EQUALIZED EXHAUST SYSTEM for 1960 CORVAIR

Complete with 2 Steel Packed Sports Car Mufflers.

Makes a real sports car of the '60 Corvair
Balances Both Pressures.
Increases Gas Mileage.
Increases Horsepower.
Increases Top Speed.
Easily installed in approx., 15 minutes—nothing else to buy.

The simplest, easiest and most economical way to improve the all-around performance of the '60 Corvair is to install this dual muffler and specialized exhaust system. Eliminates back pressure and congestion of crossover pipe and rear jack mufflers—allows exhaust gases to flow freely and let the engine deliver its top power as its top economy. Easy to install—just remove old muffler and pipe—install the dual set- ups after exhaust system. Takes only minutes- and you're ready to enjoy sports car performance from your '60 Corvair engine. Kit contains 2 steel packed sports car mufflers with chrome tailpipes, 2 dual equalized exhaust system, 2 curved extensions welded to muffler, all necessary hangers, brackets and instructions.

No. 688 ..Per Kit $23.95

NEW Type FADER SWITCH



Front & Rear Radio Speaker Control

Twisted knob permits fine speaker control for LOUD IN FRONT—LOW IN REAR LOUD IN FRONT—LOUD IN REAR Blending of Both Front and Rear Speakers.

The Type Fader switch with knurled knob is a finger tip control of rear speaker volume. Rear volume is adjusted to any desired volu- me. Attractively styled in black and chrome. Mounts on the dash. Complete with mounting bracket and wiring and easy to follow instructions.

No. 589 ..Each kit POSTPAID $2.00

"DING-DONG" BELL from BERMUDA



Just step on it.

From the romantic island of Bermuda comes this unique gift for the Fender. "Ding Dong" bell, bringing with it all the charm and color of the old world. Rust Proof and polished to a glistening finish — engineered for tone and resonance — pleasant to hear 5½" diameter bell easily mounted on any car.

No. 49 each $5.00

MANUAL TRUNK KIT



Streamlines rear deck lid. Remove prevent handle, operate from inside of car. Complete with instructions and diagrams. Easy to install.

No. 384—fits Ford 36-59, Merc. 39-59; all G.M. 49-58 exc. '49 Olds 98, 54-59 Chrys., DeSoto, Dodge, 53-59 Plymouth.

State Year, Make and Model.

POSTPAID $1.49

PUSH-BUTTON Front & Rear Speaker Selector Switch

For All Rear Seat Speaker Installations.

A touch of the button selects front, rear or both speakers at the same time.

Pre-tired, pre-soldered for fast, easy installation.

The 3-position push-button switch that gives the push-button control of your front and rear speakers. Switch mounts under dash and is pre-wired, pre-soldered—ready for installation which is complete with bright finish dial plate that is clearly marked "Front," "Rear," and "Both." Also has solderless connectors, leads, necessary mounting hardware and easy to follow instructions.

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"WIND-UP" SPORTS CAR KEY



Attach it anywhere

Here is a laugh-getting gadget everyone will enjoy. Oversize 1¼" wide x 3½" high! Wind-up-type key can be attached anywhere—on the back of your small foreign or sports car, on the door of your bathroom, on the trunk deck of any car, etc. It will create comment and bring a smile wherever it is used. Made of high impact plastic with heavy duty rubber suction cup. Will stick tightly on any clean surface by just wetting suction cup before applying.

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STOP BURNING OIL With This $7.00 Value Famous ENGINE OVERHAUL KIT



Rebuild your motor while you drive. Save on Repairs. Get new car power. Money back guaranteed.

Do-it-yourself in 10 minutes! Save on repairs! Simply drop Pellets in spark plug openings. Pour Liquid Pellets in. This patent engine action rebuilds your motor while you drive. Gets 10,000 miles out of 1 treatment.

No. 125 —$7.00 value BOTH FOR $4.95

Vinyl Coated Clip-on Coil SPRING BOOSTER



Note the improved features:

Vinyl coated—stops metal to metal contact — Eliminates squeaks and rattles.

Just Clip-on Coil Spring

Vinyl coating prevents rust. Adds to life of Coil Springs. Takes the sag and rock & roll ride out of tired coil springs.

PREVENT
- SAGGING
- BOTTOMING
- MISALIGNMENT

INCREASE
- TIRE LIFE
- STEERING EASE
- RIDING COMFORT
- ROADABILITY

Easily installed by anyone in minutes — no special tools needed.

Give new life and greatly improved action to your old, tired coil springs by adding these clip-on boosters. They make soft-riding, semi-ride-rate springs out of original coils on older cars. These clip-on boosters correct bottoming, return spring to its original dimensions and resiliency and provide a better ride. Their addition also corrects improper wheel camber, due to sagging coil springs, and helps you keep themselves in tire savings alone. Can be installed without removing springs from car and installation is permanent. Ten clip-on boosters to each set provide enough clip-on boosters to permit just the right amount of correction. You can use 3, 4, or 5 boosters on each coil depending on how much correction is required.

No. 435 Set of 10 POSTPAID $5.25

Spiral Hubcap Decal



Add new, original, custom styling to your car with these hypnotic spiral hubcap decals. Printed in silver and black, spiral pattern catches every eye when wheels start rolling. Also included are two bolts with nuts and two separate nuts on each sheet. Decal is 2¾" in diameter, bolts are 3" long, nuts are 1⅝" wide. Can be easily applied to any smooth finished wheel cover after it has been thoroughly cleaned and dried. Decals will not chip, peel or fade. Specially treated to adhere to chrome finishes.

No. 362 —Set of 2 POSTPAID $1.75
No. 363 —Set of 4 POSTPAID 3.00

"Hollywood" Wolf Whistle



Intake manifold whistle gives the wolf call, imitates a baying dog and other effects. Simple to install—works off the intake manifold.

No. 61—POSTPAID. Each $2.95

MELLOW TONE Fiber Glass Packed MUFFLERS



Custom designed and engineered to fit each make and model of car—no alterations necessary.

Increases horsepower, increases gas mileage, straight-thru construction, no back pressure, no high pitch irritating noises, deep powerful non-offensive tones. Be sure to Specify Make of Car, Exact Year & Model, Type of Transmission, Single or Dual Exhaust.

Stk. No. 37—Each $4.95

AUTO FABRIC SPRAY

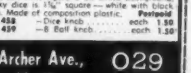


For a new looking car interior. Brightens and freshens faded and soiled fabrics. 12 oz. pressurized can sprays for use on headliner, door panelling and floor coverings. Does not rub or fade. Use to tu-tone upholstery. Choice of red, rust, brown, tan, dark and light green, dark and light blue, dark and light grey, yellow, maroon, rose or black and white.

Specify color when ordering.

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"LUCKY" Gear Shift KNOBS



Fit ALL gear shift levers

New, novel gear shift knobs—be the first to have them. 8 ball knob is 1¾" in diameter, all black with figure 8 on white background. Lucky dice is 1¾" square—white with black dots. Made of composition plastic. Postpaid

No. 438 —Dice knob ..... each 1.50
No. 439 —8 Ball knob ..... each 1.50

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Destroys engine acids! Stops engine suicide! Reactor plug replaces oil drain plug. Magnet draws all metallic abrasives from engine oil insuring longer engine life. For all makes, no. of cars.

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VOODOO HEAD Gearshift KNOBS



Cast metal with gleaming hammered finish. Eyes sparkle like ruby jewels. Lifetime construction. Easily installed on any gear-shift lever. Complete with 2 plastic bushings.

A. No. 396 Each Postpaid $2.00
B. No. 208 Each Postpaid $2.00

A. 3" B. 3½"

AH-OOO-GAH Chromed HORN



Here it is for the sport car enthusiast. Not a vibrator or other substitute but a genuine motor driven horn.

Chrome Plated Bell with Black Wrinkle Painted Housing. State 6 or 12 VOLT

No. 60—POSTPAID $12.60

All Chrome Plated Bell and Housing. Weatherproofed for outside mounting. State 6 or 12 VOLT

No. 62—POSTPAID $15.00

"Stop Car Thieves" with this Auto Burglar Alarm



Let this private police-man protect your car 24 hours a day—completely automatic — blows horn intermittently if car is molested. Resets itself automatically. Easy to install.

Here is the only all-out protection against accessory, tire, gasoline and auto thieves. Alarm installs under car hood and automatically blows car horn intermittently the instant anyone touches any part of the car—and continues to blow it for approximately 15 seconds after car is left unmolested. Simply set switch and attaches to dash and under car. Upon contact, alarm scares thief away. With complete instructions. Quick, quick installation.

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For 49-54 CHEV.

One piece unit extends from the windshield to the roll-rolled front quality stainless steel. Permits "shaping" of the hood at a minimum of expense. Replaces the original unit in the same slots. No welding, cutting, drilling required.

No. 545—49-52 Chev. One Piece Each $3.50
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No. 547—49-52 Chev. 2 PIECE BULL NOSE MOULDING for use with car ornament. Per Set $2.00

HI-SPEED ELECTRIC SIREN



Developed especially for the U. S. Navy & Coast Guard. Now used by hundreds of Fire & police departments, buses, ambulances, etc. Complete with bracket, screws, 10 ft. of cable & push button. Green Enamel.

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Sparkling CHROME PLATED DISTRIBUTOR CAPS For All CARS



Dress Up Your Engine with These Beautiful Chrome Plated

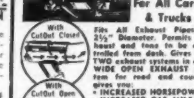
The most exciting accessory you can add to your engine . . . really gives it that decorator's touch. It's easy to install. Replace original equipment caps perfectly. Not only adds beauty to your engine, it also has the added advantage of it's superior construction to outlast the original equipment caps. Molded of Hi-dielectric, fine textured, practically non-porous bakelite. Chrome plating of the cap is of top quality. For all cars, except 57-60 Buick, 56-60 Cadillac, 57-60 Chevrolet, 56-58 Oldsmobile, 57-60 Pontiac, and 57-59 Rambler.

No. 956—Each ..... Postpaid $4.95

For 57-60 Buick, 56-60 Cadillac, 57-60 Chevrolet, 56-58 Oldsmobile, 57-60 Pontiac, and 57-59 Rambler.

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EXHAUST CUTOUTS For All Cars & Trucks



Fits All Exhaust Pipes to 2½" Diameter. Permits exhaust and noise to be controlled from dash. Gives you TWO exhaust systems in one. WIDE OPEN EXHAUST system for racing, and QUIET system for driven horn.

- INCREASED HORSEPOWER
- INCREASED GAS MILEAGE
- FASTER ACCELERATION
- IMPROVED PERFORMANCE
- HIGHER TOP SPEEDS
- REDUCED ENGINE HEAT

Closed quiet exhaust for city and restricted zones.

Cutout has extended outlet for use with flexible tubing or exhaust pipe, where auxiliary tone is desired. Cutout is of heavy gauge steel all welded construction—actually strengthens the exhaust pipe. Completely mechanical—no springs to break or fail. New direct valve seat below pipe level assures tight leakproof seal when closed. Angled outlet permits free unrestricted flow through outlet. Can also be used to operate two different toned mufflers. Exhaust cutout is complete with mounting bolts, insulating asbestos, and dash control.

No. 66—For All Exhaust Pipes through 2" diameter
No. 318—For All Exhaust Pipes 2⅛ thru 2½" diam.

POSTPAID EACH $2.89

PIN STRIPING

The Newest and Latest Custom Design
Choice of White, Gold, Black, or Red



Ready made original design striping, easily applied in minutes. Can be applied on any clean, dry surface. Will not mar paint or fade. Kit contains fifteen decals, in nine different designs up to 6½".

Will stripe an entire car, fenders, trunk lid, hood, skirts and other parts. Specify color when ordering. White, Gold, Black, Red.

No. 226—POSTPAID. Per Kit $1.00

CAST IRON EXHAUST CUT-OUT



For All Cars with Exhaust Pipes 1¾" to 2½"

Exhaust tone is controlled from the dash. Can be used as a cut-out in the country and closed in restricted areas. Can also be used to operate two different toned mufflers. Sturdy cast iron construction. Easily installed.

No. 612—Each $3.75

GLEAMING CHROME GENERATOR COVERS



For all Late Model Step-Down Generators.

- Dresses up Generator — adds gleaming chrome.
- Easily installed.

Dress up late model generators the easy way—use these new 2 piece chrome generator covers to add a sparkling finishing touch to your engine. Covers the entire generator, main case and drive end, in two sections. Beautifully chrome plated over heavy gauge steel—won't discolor from heat. For the following cars:

No. 423A —For 53-60 Chevrolet, Pontiac
No. 443B —For 53-60 Buick, Cadillac, Olds.

Complete 2 piece set, per set ..... POSTPAID $3.00

FRONT or REAR END LOWERING KITS For All Cars With Front or Rear Coil Springs



For Use on All Coil Springs With or Without Shock Absorbers in the Center.

- Easy, quick way to lower front or rear ends.
- Adjustable 2" to 3" drop.
- Gives a car that l-o-w, l-o-o-k look.
- Reduces center of gravity—reduces wind resistance for added safety.
- Easily installed—no need to remove "A" frame or springs.
- No cutting, drilling or welding necessary.

With this new front end lowering kit you can quickly and easily lower the front or rear of any car with coil springs. Makes it easy to achieve that extra-low level look. This kit is designed for easy installation—has specially engineered clamps that fit in and over coils of spring easily on most cars. Can be installed without removing springs or "A" frame. Clamps permit lowering front or rear end of car from 2" to 3"—can be easily adjusted as desired. Kits are complete with all necessary parts to lower both front or rear coil springs and full instructions.

No. 83 ..... $4.95

MUFFLER BI-PASS KIT



Gives your car the power & zip of straight through performance. Complete unit includes dash controlled cut-in and cut-out with 48" —16 Gauge flexible tubing to by-pass your muffler. All parts & instructions included. Fits all exhaust pipes 1¾" to 2½" finished.

No. 120—POSTPAID $8.70

AUTOMATIC TRUNK LIGHT



Completely automatic operation. Equipped with Minneapolis - Honeywell Mercury Switch. Simple installation. Lights when trunk lid is opened. Fits any car—all necessary wire included. Completely finished.

No. 141—POSTPAID Each $1.59

CONVERTIBLE RAINCOAT

Quick, Slip-On Protection in Any Kind Of Weather For Convertibles.



Attractive Plastic cover protects top or interior from dirt, dust, fog, rain, snow and other elements. Saves all wear and tear on expensive fabric tops. Quick, sure, easy, inexpensive protection with one-minute installation. Built to last, with elastic tight-grip edge, and snaps. Fits all standard model convertibles. Can be used when top is up or down. Also handy as a cover for play pens, small boats, furniture, baby carriages and many other items. Furnished in plastic bag for storage.

No. 574 —Each $5.95

FUZZY CAR MUFFS for Mirror, Visor or Horn Ring



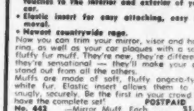
- Soft, fuzzy white for muffs—add distinctive touches to the interior and exterior of your car.
- Elastic insert for easy attaching, easy removal.
- Newest countrywide rage.

Now you can trim your mirror, visor and horn ring, as well as your car plaques with a soft, fluffy fur muff. They're new, they're different, they're sensational — they'll make your car stand out from all the others.

Muffs are made of soft, fluffy angora-type white fur. Elastic insert allows them to fit snugly, securely. Be the first in your crowd to have the complete set!

No. 443 —Mirror Muff. Each $1.00
No. 57 —Visor or Horn Ring Muff. Each ..... POSTPAID $1.50

FUZZY Car Plaque Muffs



Fits snugly around car plaque, trims it with soft, fuzzy white fur.

Adds a distinctive touch to the exterior of your car.

They're new, they're different, they're sensational.

The newest rage—dressing your car plaque or plaques with a soft, fluffy fur muff. Muffs have elastic insert for snug, secure fit. Looks like the hand-made models that cost much much more. Be the first in your crowd to have this brand-new car plaque muff.

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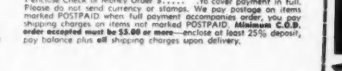
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CHOICE OF 3 FABRICS—EACH IN 4 COLORS



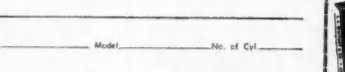
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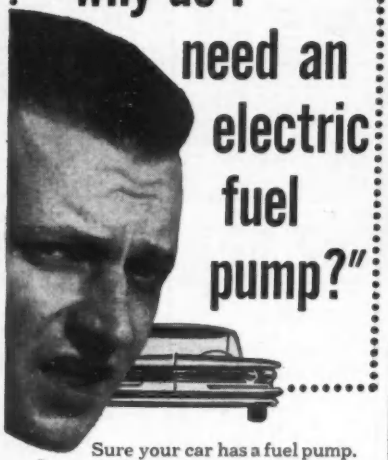


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AROUND THE WORLD *continued*

was expected this past spring, but with a shortage of workers, a problem which leads to troubles in the production program not only at Borgward, but in the entire German metal industry, first units are not expected until late this fall.

As yet unnamed, the new Borgward was shown in the Frankfort show with a suspension system similar to the one on the Isabella model. However, Borgward has developed a new air suspension for this car, and it will be available along with the older type on the production line. The air suspension is a development of Borgward, Phoenix-Firestone and Bosch, but I was told it is an American patent and has been much improved by the three firms.

On the road test, I drove over bad roads with many holes, two very bad railroad crossings, narrow turns, and cobblestone roads. With the Mercedes-Benz 220 in my mind, I had a good base to compare. My first impression: riding comfort is much improved in comparison with the conventional suspension in riding over holes, even deep ones; waves in the road, washboard style, were absorbed much faster, and two tests over the rail crossings proved to be safe and stable. Fast driving was not possible, and I cannot say anything about steering characteristics and road holding at critical mo-

A smartly styled body shows off the new Borgward 2.3-liter sedan which is expected to roll off the assembly lines late this fall. The car features a new air suspension system and much improved Hansamatic automatic shift.



A smart, custom sport body is now offered on the Citroen DS-19. Designed and built by Chapron in a sporting short-chassis form, it is available in coupe and convertible models. The coachwork is largely built from standard panels. The DS-19 won the championship of the Worlds Touring Car Rally in 1959.

ments, particularly in turns and curves, but my general overall impression is that this new Borgward is a very sporty car.

Comfort inside is excellent, and the single seats in the front are adjustable forwards and backwards. Styling of the seat is good and gives the occupant excellent sideways support. Instrument panel is well designed and all control buttons are countersunk in an upholstered frame to add to the overall safety. The all-around windshield gives excellent visibility.

The car has a four-speed, full synchronized gearbox with gear lever on the steering column, and the shift handles easy. Position of driver to steering wheel and brakes, including the turbo-cooled brakes is good. The 100-horsepower engine gives the car a sporty acceleration and elasticity in running and enables the car to be driven principally in third or fourth gear. The engine noise is very low and it has a maximum torque of 87.451 pounds-feet. Top speed is 100 miles per hour.

Details of the new air suspension were not made available by Borgward officials. I was told that there is very little service necessary for this type of spring.

This new car also will be available with an automatic shift, called the Hansamatic. This shift is now optional on the Isabella and TS at an added cost of about $250. The transmission is a design of Howard Hobbs in England and improved by Borgward. It has two single-plate clutches, a planetary gear with four speeds and the necessary braking plates, and two oil pressure pumps. The transmission is hydraulically operated, and the change of power is mechanical which results in no loss of power. Gear change is steered by valves and the energy for clutch and gear change is driven by two hydraulic pumps driven by the engine through the driveshaft. For full automatic operation, the gear lever is set at the neutral, backwards or forwards scale on the steering column. However, you can influence the shift by changes in shifting the lever—place the gear in third, it will operate in only one, two and three; select second gear and it will operate only in first and second.

Since the automatic transmission is always engaged, there is no pause during shifting of gears. There is no doubt that the Hansamatic is an improvement in driving the car and it will give you more riding comfort. —G.M.

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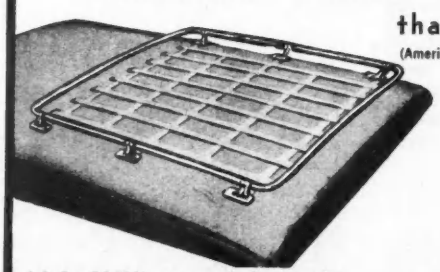
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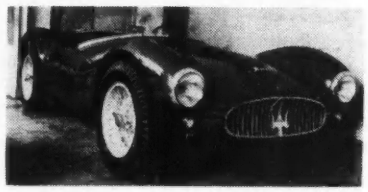
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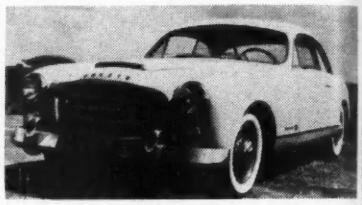
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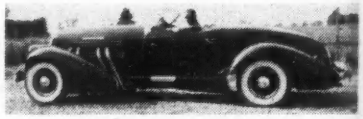
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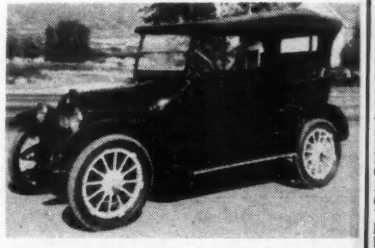
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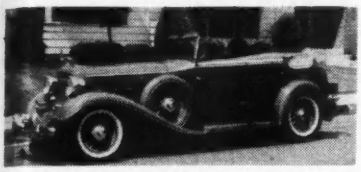
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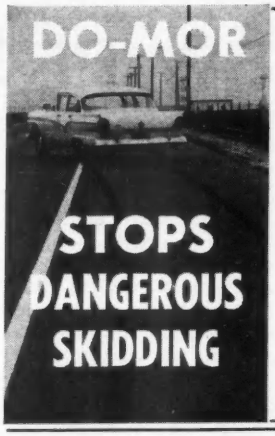
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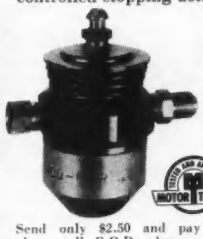
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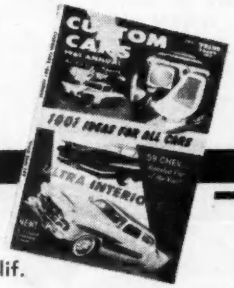
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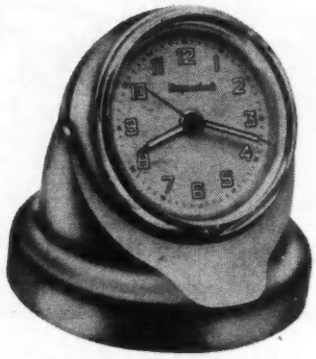
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A NEW LINE OF SWIVEL dashboard autoclocks, mounted with strong permanent magnets in the base, has been announced. Called the "Swivelhead Magnaclock," it is available in four models featuring an 8-day or 30-hour movement, and with or without alarms. The clocks are housed in attractive contour molded high-impact cases, and are available in silver, gold, red, blue, or green cases fitted into matching or contrasting bases. They are designed to securely grip any steel surface, and can be pivoted. The imported precision movements are fully guaranteed, and are not affected by the magnet. The hands and numerals are luminous. Prices are from $7.95 to



$19.95. Information can be obtained by writing Glass Laboratories, Inc., 863 65th St., Brooklyn 20, N.Y.

CORVAIR OWNERS NOW can boost the horsepower in their compacts by the installation of a CU-1 dual exhaust system from J & J Muffler Specialties. With this new high-efficiency system, both gas economy and performance are increased.



It gives a quiet, pleasant tone and adds that distinctive touch to the modern styling. Each part is engineered and tested for maximum performance and durability. The system only takes a few minutes for installation, and without the use of special tools. The price is only $29.95, and information can be obtained by writing J & J Muffler Specialities, 501 S. La Brea Ave., Inglewood, Calif.

CAR CLUB MEMBERS, would you like to display your club emblem without damaging it? The Victory Car Club plaque holder will fill the bill. It holds any size or thickness plaque with a vise-like



grip that can be instantly released. Holder fastens permanently to the rear window deck inside the car with two chrome metal screws. The holder is of triple-polished chrome and complete with screws for mounting. Club inquiries invited. It sells for $4.95 f.o.b. and is distributed by Victory Speed 'N Auto Supply, 10531 Victory Blvd., Dept. MT, North Hollywood, Calif.

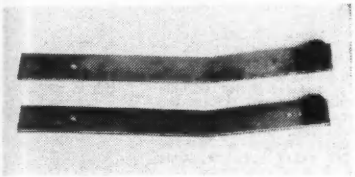
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WITH THE TREND TOWARDS aluminum engines, a new product has been developed to help with service problems. Called Permatex Anti-Seize Compound, the product is useful for applications ranging from lubrication of head bolts to providing a pressure-tight seal for spark plugs. A coating of the graphite-grease compound on bolt and stud threads insures smooth assembly, accurate torquing, and "no-strain" disassembly of automotive components subjected to high temperatures and pressures. Because the compound eliminates bolt "freezing," caused by corrosion and heat distortion,



excessive bolt-release effort is avoided, and, this in turn, minimizes chances of bolt or stud breakage during disassembly. It is available in 1-pound cans and can be purchased through the Permatex network of automotive jobbers. Information can be obtained by writing the Permatex Company, Inc., Huntington, N.Y.

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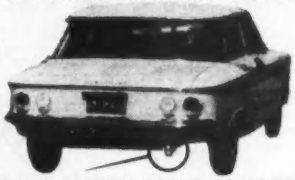
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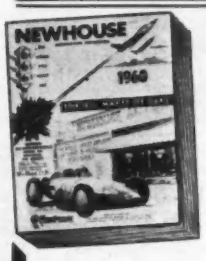


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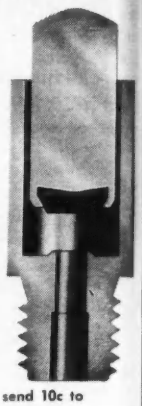
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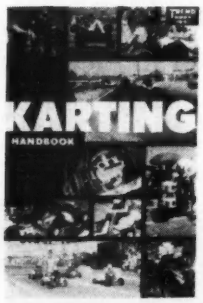
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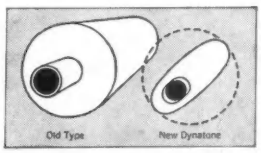
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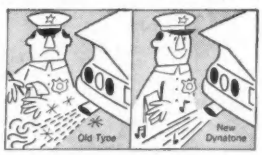
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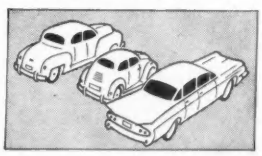
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